ORDER NO.KM69709588C1
G12

Service Manual

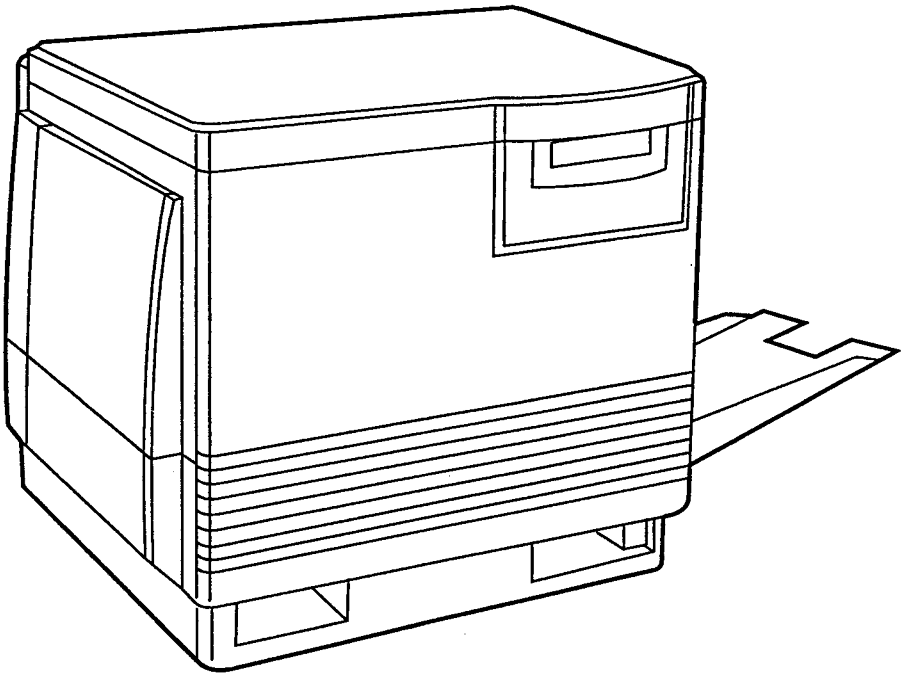
V20089

Digital Color Imaging System

KX-PS8000

Printer Section

SD



Note :
The KX-PS8000 Service Manual separated into 2 sections : Printer and Scanner.

This manual (Printer Section) covers the Printer Block for the KX-PS8000 Color Image Editing System. For information regarding the Scanner and Auto Document Feeder Blocks, refer to Scanner Section (Order No. KM69709588C1) of the KX-PS8000 Service Manual.

Panasonic

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

DANGER: Invisible laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.	CAUTION: Invisible laser radiation when open and interlocks defeated. AVOID EXPOSURE TO BEAM.	VORSICHT: Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet und Sicherheitsverriegelung überbrückt. NICHT DEM STRAHL AUSSETZEN.	ATTENTION: Rayonnement laser invisible dangereux en cas d'ouverture et lorsque la sécurité est neutralisée. EXPOSITION DANGEREUSE AU FAISCEAU.	Class 3B

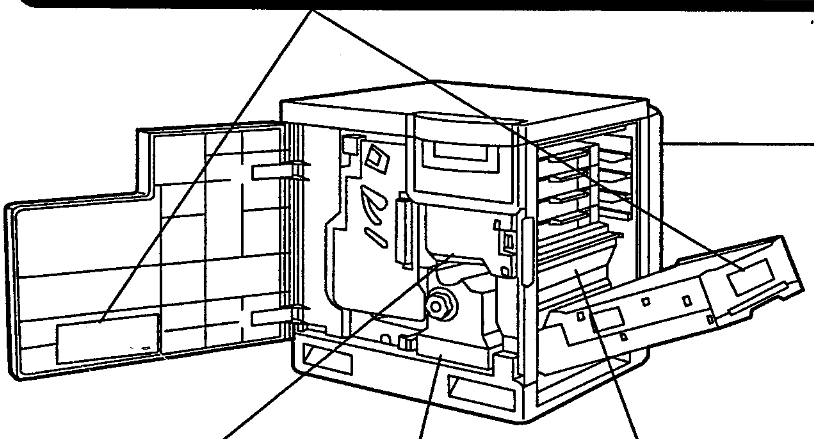
PELIGRO: Cuando se abre y se invalida el bloqueo, se producen radiaciones invisibles de láser. EVÍTESE LA EXPOSICIÓN A TALES RAYOS.	VARNING: Osynlig laser-strålning när denna del är öppnad och spärrar är urkopplade. STRÅLEN ÄR FARLIG.	VAROI: Näkymätön avattaessa ja suojalukitus ohitettaessa olet alttiina lasersäteilylle. ÄLÄ KATSO SÄTEESEN.	VARNING: Osynlig laserstralning när denna del är öppnad och spärren är urkopplade. BETRAKTA EJ STRÅLEN.	ADVARSEL: Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. UNDGÅ UD ÆTTELSE FOR STRÅLING.	ADVARSEL: Usynlig laserstraling nar deksel åpnes og sikkerhedslas brytes. UNNGÅ EKSPONERING FOR STRÅLEN. PJQTA0190ZA

(220-240 VAC equipment)

CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
CLASSE 1 LASER PRODUIT
CLASE 1 LASER PRODUCTO

Laser diode properties

Laser output	: 5 mW max
Wavelength	: 780 nm
Emission duration	: Continuous



CAUTION:
HOT SURFACE INSIDE

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HOT SURFACE INSIDE
ATTENTION:
SURFACE CHAUDE CI-INTERIEUR
VORSICHT:
HEISSE FLÄCHE INTERN
ATENCION:
SUPERFICIE CALIENTE EN EL INTERNO

CAUTION:HOT SURFACE BELOW
ATTENTION:SURFACE CHAUDE CI-DESSOUS
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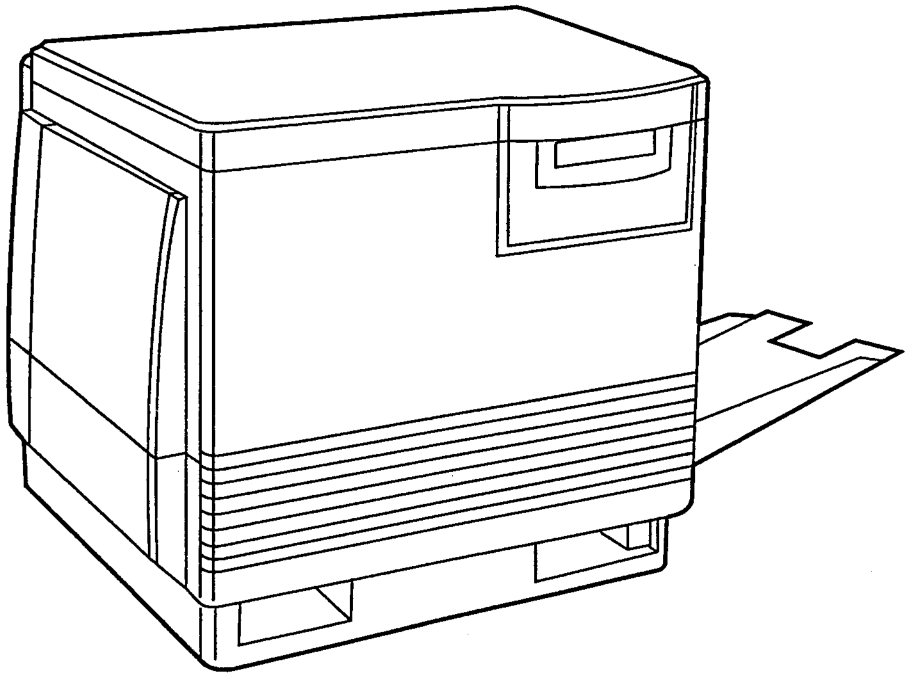

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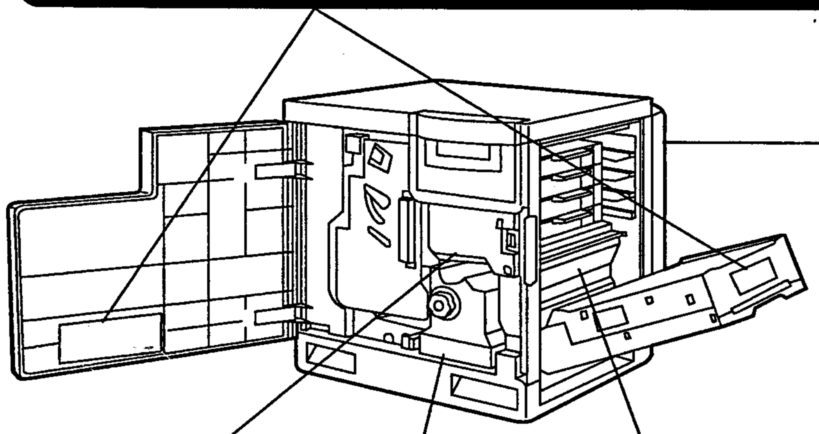
PJQTA0190ZA

(220-240 VAC equipment)



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1. Introduction

1.1 Specifications

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<tr><td>Printer</td><td>CPU</td><td>INTEL i80960SA (16 MHz)</td></tr>
<tr><td></td><td>Printing Method</td><td>Semiconductor Laser</td></tr>
<tr><td></td><td>Host I/F</td><td>Standard : Bidirectional parallel, SCSI-2
Option : 10 baseT, 10 base 2</td></tr>
<tr><td></td><td>Print Speed</td><td>The speeds listed in the following table represent the time the printer produces multiple prints on various media and resolution (Continuous throughput rate).
Continuous Print Speed (ppm)
<table>
<tr><th></th><th colspan="2">Plain Paper</th><th colspan="2">Legal</th><th colspan="2">Transparency</th></tr>
<tr><th></th><th>color</th><th>mono</th><th>color</th><th>mono</th><th>color</th><th>mono</th></tr>
<tr><td>600x600 dpi</td><td>3.5</td><td>14</td><td>1.75</td><td>7</td><td>1.75</td><td>7</td></tr>
<tr><td>1200x1200 dpi</td><td>1.75</td><td>7</td><td>0.87</td><td>3.5</td><td></td><td></td></tr>
</table></td></tr>
<tr><td></td><td>Resolution</td><td>600 x 600 dpi
1200 x 1200 dpi (additional RAM required)</td></tr>
<tr><td></td><td>Paper Output</td><td>Up to 500 sheets [75 g/m² (20 lbs.)]</td></tr>
<tr><td></td><td>RAM</td><td>Standard 16 MB (expandable to a maximum of 80 MB with optional SIMMs)</td></tr>
<tr><td></td><td>Operating Environment</td><td>10 to 32.5 °C {50 to 90.5 °F}
20 to 80 % RH</td></tr>
<tr><td></td><td>Storage Environment</td><td>0 to 40 °C {32 to 104 °F}
10 to 80 % RH</td></tr>
<tr><td></td><td>Best Print Quality</td><td>15 °C to 25 °C {59 °F to 77 °F}
30 to 70 % RH</td></tr>
<tr><td></td><td>Operating Altitude</td><td>0 to 2,500 m (8,000 ft.)</td></tr>
<tr><td></td><td>Storage Altitude</td><td>0 to 4,000 m (13,125 ft.)</td></tr>
<tr><td></td><td>Warm Up Time</td><td>Less than 300 seconds</td></tr>
<tr><td></td><td>Dimensions of Standard Unit (without 2nd Cassette Feeder)</td><td>Height: 463 mm (18.2 ")
Depth: 493 mm (19.4 ")
Width: 510 mm (20.1 ") [784 mm (30.9") with the output tray]
*711 mm (28 ") with the output tray</td></tr>
<tr><td></td><td>Mass {Weight} of standard unit with all consumables</td><td>(without optional 2nd Cassette Feeder)
Approx. 47.88 Kg {105.6 lbs.}</td></tr>
<tr><td></td><td>Voltage</td><td>120 VAC ±10 %</td></tr>
<tr><td></td><td>Frenquency</td><td>60 Hz</td></tr>
<tr><td></td><td>Power Consumption</td><td>850 W Max. (printing with fuser on)
35 W (standby with fuser off)
25 W (Energy Star mode)
Meets Energy Star power conservation requirements.</td></tr>
<tr><td></td><td>Noise Level</td><td>53 dB(A) (Printing mode)
47 dB(A) (Standby mode)
Except the mechanical noise at the start. (ex. Gear)</td></tr>
<tr><td></td><td>Density Control</td><td>Variable</td></tr>
</table>

<table>
<tr><td rowspan="6">Printer</td><td>Fusing System</td><td colspan="4">Heat and Pressure Rollers</td></tr>
<tr><td>Photoreceptor</td><td colspan="4">Organic Photoconductor (OPC)</td></tr>
<tr><td>Development Process</td><td colspan="4">One component non magnetic development</td></tr>
<tr><td>Consumables/Life</td><td colspan="4">Toner Cartridges 12,000 pages average (Black),
10,000 pages average (C.M.Y)
(5% image area)</td></tr>
<tr><td>Power Saving Mode</td><td colspan="4">To conserve energy and reduce operating cost, this printer is equipped with a programmable power save feature. The printer is factory set with the power save feature turned on and programmed to 30 minutes to comply with Energy Star requirements.</td></tr>
<tr><td>Safety and EMC Standard</td><td colspan="4">For 100-120 VAC equipment: UL 1950, Listed
FCC Part 15, Subpart B "Class B", Certified</td></tr>
<tr><td rowspan="24">Paper</td><td rowspan="6">Paper Weight</td><td rowspan="2">Media tray*</td><td rowspan="2">One-sided printing</td><td>B&W</td><td>60 to 105 g/m² (16 to 28 lbs.)</td></tr>
<tr><td>Color</td><td>70 to 105 g/m² (20 to 28 lbs.)</td></tr>
<tr><td rowspan="4">Multi-purpose tray</td><td rowspan="2">One-sided printing</td><td>B&W</td><td>75 to 165 g/m² (20 to 44 lbs.)</td></tr>
<tr><td>Color</td><td>75 to 165 g/m² (20 to 44 lbs.)</td></tr>
<tr><td rowspan="2">Two-sided printing</td><td>B&W</td><td>75 to 105 g/m² (20 to 28 lbs.)</td></tr>
<tr><td>Color</td><td>90 to 105 g/m² (24 to 28 lbs.)</td></tr>
<tr><td>Thickness</td><td colspan="4">3.7 to 7.5 mils (1 mil=1/1000")</td></tr>
<tr><td>Moisture Content</td><td colspan="4">4% to 6%</td></tr>
<tr><td>Smoothness</td><td colspan="4">100 to 300 Sheffield</td></tr>
<tr><td>Acid Content</td><td colspan="4">5.5 PH minimum</td></tr>
<tr><td>Fusing Compatibility</td><td colspan="4">Must not scorch, melt, offset material or release hazardous emissions when heated to 200°C (392°F) for 0.1 second</td></tr>
<tr><td>Cutting Dimensions</td><td colspan="4">±0.0313 inch of normal, corners 90° ±4°</td></tr>
<tr><td>Grain</td><td colspan="4">Long grain</td></tr>
<tr><td>Cut Edge Conditions</td><td colspan="4">Cut with sharp blades, no paper dust</td></tr>
<tr><td>Ash Content</td><td colspan="4">Not to exceed 10 %</td></tr>
<tr><td>Curl</td><td colspan="4">No allowable curl toward the side to be printed</td></tr>
<tr><td>Packing</td><td colspan="4">Polylaminated moisture proof ream wrap</td></tr>
<tr><td rowspan="3">Paper Size</td><td colspan="2">A4</td><td colspan="2">8.27 " X 11.7" (210 X 297 mm)</td></tr>
<tr><td colspan="2">Legal</td><td colspan="2">8.5" X 14" (216 X 356 mm)</td></tr>
<tr><td colspan="2">Letter</td><td colspan="2">8.5" X 11" (216 X 279 mm)</td></tr>
<tr><td rowspan="2">Transparency Size</td><td colspan="2">A4</td><td colspan="2">8.27 " X 11.7" (210 X 297 mm)</td></tr>
<tr><td colspan="2">Letter</td><td colspan="2">8.5" X 11" (216 X 279 mm)</td></tr>
<tr><td>Envelope Size</td><td colspan="2">Com-10 Env. (Envelope #10)</td><td colspan="2">4.13" X 9.5" (104.9 X 241.3 mm)</td></tr>
</table>

Types of paper to avoid

1. Extremely smooth or shiny paper or paper that is highly textured
2. Letterhead imprinted with low temperature or thermography. These materials may transfer onto the fusing roller and cause damage. Any pre-printed paper should use inks compatible with 200°C (392°F) for 0.1 second.
3. Damaged or wrinkled paper, or paper with irregularities such as tabs, staples, etc.
4. Multipart forms or carbonless paper
5. Paper with a cotton and/or fiber content 25% or more
6. Ink jet paper (It may transfer onto the fuser roller and cause damage.)

* We do not recommend the use of 105 g/m² (28 lbs.) paper in areas of high or low humidity and temperature since paper feed problems may be experienced.

Cable (Included with Printer)

Cable	Description
(1) SCSI-2 HD to SCSI-2 HD	50-pin high-density to 50-pin high density plug; 1.2 m (3.94 ft.)
	Connects the scanner to the printer.

Device Cables (Not included with Printer)

Cables	Description
(2) Parallel/Centronics	36-pin high-density plug to 25-pin DSUB plug; less than 2.0 m (6.56 ft.)
	Connects the printer to a PC parallel port.
(3) SCSI-2 HD to SCSI-2 HD	50-pin high-density plug to 50-pin high-density plug; less than 2.0 m (6.56 ft.)
	Connects the printer's SCSI port to a PC.
(4) SCSI-2 HD to SCSI-1 LD	50-pin high-density plug to 50-pin low-density plug; less than 2.0 m (6.56 ft)
	Connects KX-PS8000's SCSI port to a PC.

Specifications are subject to change without notice.

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All about media

- **The recommended media is as follows;**
  Letter: Hammermill LASERPRINT 90 g/m² (24 lbs.)
  A4: NEUSIEDLER COLOR COPY 90 g/m² (24 lbs.)
  For the finest resolution and the brightest, most consistent colors, use a high grade laser paper: 75-105 g/m² (20-28 lbs.) paper in the media trays and 60-120 g/m² (16-32 lbs.) with multi-purpose tray.

  Transparency: 3M CG3700

- **Labels**
  Use only full 8.5" x 11" or A4 label sheets rather than die-cut label sheets through the multi-purpose tray. Die-cut labels may peel off from their backing and stick inside the imaging unit or fuser.

- **Envelopes**
  This printer prints black text only using the following high quality #10 laser envelopes with diagonal steams. Do not insert more than one envelope at a time.
  - A thin, sharply creased leading edge.
  - Paper weight of 90 g /m² (24 lbs.)
  - Flat and free of curls, wrinkles, nicks, etc.

- Make sure that the media trays are free of dust. Dust and dirt in a media tray can be transferred to the paper or transparency, resulting in poor print quality.

- Handle paper and transparencies with both hands at the edges to avoid creases and fingerprints, which can result in poor print quality.

- Store paper and transparencies in the original dust-free package.

- To prevent transparencies or paper from sticking together, fan them before loading into the appropriate media tray.

- If the optional 2nd cassette feeder is used: A media tray can be installed in any of the three tray slots; however, the transparency tray should only be inserted in the upper and middle tray slots.

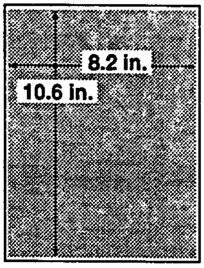
Margins and Print Area

When the printer places an image on media, the image (print area) is a bit smaller than the media size. Page margins adjustment may be needed in an application software to match the print area.

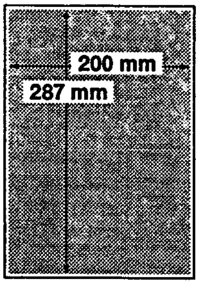
The following table lists the page sizes, the maximum print areas, and the margins for the media sizes supported on this printer.

Media	Page Size	Print Area	Margins		
			Top	Bottom	Sides
1. A/Letter (U.S.)	8.5" x 11" (216 x 279 mm)	8.2" x 10.6" (208 x 269 mm)	.22 " (5.6 mm)	.22" (5.6 mm)	.14" (3.6 mm)
2. A4 (Metric)	8.3" x 11.7" (210 x 297 mm)	7.9" x 11.3" (200 x 287 mm)	.2" (5.1 mm)	.19" (4.7 mm)	.19" (4.7 mm)
3. Legal	8.5" x 14" (216 x 356 mm)	8.2" x 13.5" (208 x 343 mm)	.23 " (5.8 mm)	.23" (5.8 mm)	.14" (3.6 mm)

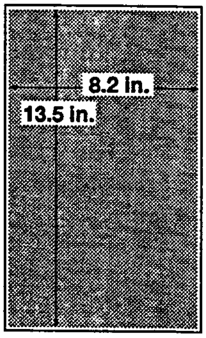
1



2



3



RAM and printer capabilities

The printer features 16 Mbytes of base RAM and two SIMM connectors which accept 4, 8, 16 and 32-Mbytes RAM SIMMs. With additional RAM memory the printer's capabilities increase as follows.

■When the print style is set to Color Photo;

Print Quality	less than 32 M bytes	more than 32 M bytes
Fast (300 dpi)	Data capacity*1 is 8 M. Compresses data to a quarter.	
STD (600 dpi)	Data capacity*1 is 8 M. Compresses data to a sixteenth.	Data capacity*1 is 32 M. *2 A quarter or a sixteenth compression is selectable. In a quarter compression, image quality is prior to print speed. In a sixteenth compression, print speed is prior to image quality.
High Quality (1200 dpi)	NA	NA

■When the print style is set to Color Graphics;

Print Quality	less than 32 M bytes	more than 32 M bytes
Fast (300 dpi)	Encodes data with Run Length. Data capacity*1 is 4 M before compression.	
STD (600 dpi)	Encodes data with Run Length. Data capacity*1 is 16 M before compression.	
High Quality (1200 dpi)	Encodes data with Run Length. Data capacity*1 is 64 M before compression.	

■When the print style is set to Gray Scale;

Print Quality	less than 32 M bytes	more than 32 M bytes
Fast (300 dpi)	Data capacity*1 is 2 M. Compresses data to a quarter.	
STD (600 dpi)	Data capacity*1 is 8 M. Compresses data to a quarter.	Data capacity*1 is 32 M. *2 A quarter or no compression is selectable. In a quarter compression, print speed is prior to image quality. In no compression, image is prior to print speed.
High Quality (1200 dpi)	NA	NA

■When the print style is set to Black Text;

Print Quality	less than 32 M bytes	more than 32 M bytes
Fast (300 dpi)	Encodes data with Run Length. Data capacity*1 is 1 M before compression.	
STD (600 dpi)	Encodes data with Run Length. Data capacity*1 is 4 M before compression.	
High Quality (1200 dpi)	Encodes data with Run Length. Data capacity*1 is 16 M before compression.	

■When the print style is set to Presentation;

Print Quality	less than 32 M bytes	more than 32 M bytes
Fast (300 dpi)	Data capacity*1 is 8 M. Compresses data to a quarter.	
STD (600 dpi)	NA	NA
High Quality (1200 dpi)	NA	NA

NA = Not Available

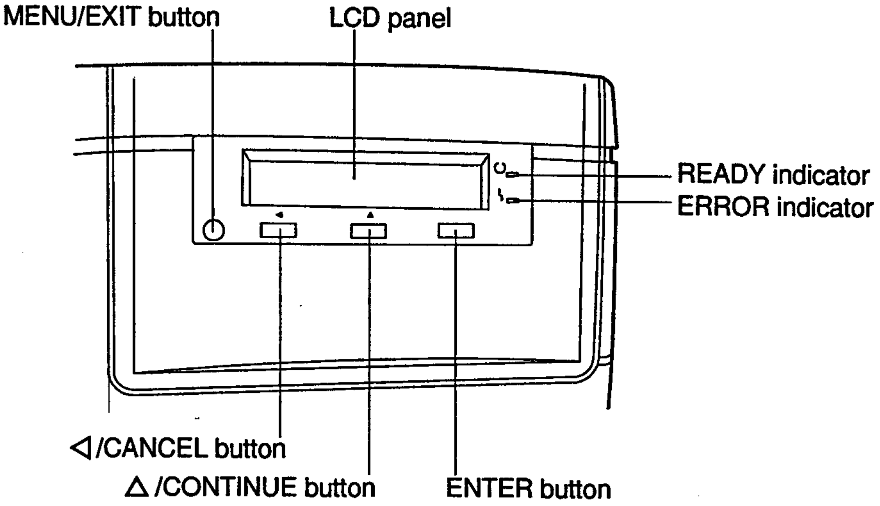
*1 when printing on Letter/A4

*2 If installed memory is over 32 M bytes, user can select either quality or speed by setting in GUI (printer memory usage in option tab).

1.2 Options, Accessories and Supplies

KX-PKC3	A/Letter paper tray
KX-PKC4	A4 paper tray
KX-PKC5	A/Letter transparency tray
KX-PKC6	A4 transparency tray
KX-PKC7	Legal paper tray
KX-PCSF1	2nd Cassette Feeder
KX-PEMC7	4 MB SIMM
KX-PEMC8	8 MB SIMM
KX-PEMC9	16 MB SIMM
KX-PEMCA	32 MB SIMM
KX-PNBC4	Network Card for Ethernet
KX-PDPK3	Toner cartridge : Black
KX-PDPC3	Toner cartridge : Cyan
KX-PDPM3	Toner cartridge : Magenta
KX-PDPY3	Toner cartridge : Yellow
KX-PFSU3	Fuser
KX-PPRC3	Imaging unit
KX-PTRU3	Transfer kit
KX-PWBR3	Oil Supply Roll

1.3 Control Panel



(1) **Liquid Crystal Display (LCD)**
The printer is equipped with a 2-line, 48-character LCD (2 x 24 characters) to display the printer's status/ error messages or menu settings.

(2) **READY indicator (green)**
- ON: the printer is ready for operation.
- Blinking: the printer is warming up or in the Menu mode.
- Blinking fast: the printer is printing.

(3) **ERROR indicator (orange)**
- ON: internal error (call service error) has occurred.
- Blinking: user correctable error, such as media jam, open door, or a missing replaceable component (e.g. Toner) has occurred.

Media jam
Any of the printer doors are open
Any of the user - replaceable components are missing

(4) **MENU/EXIT button**
- When this button is pressed in the "Ready" status, the printer enters the Menu mode.
- When this button is pressed in the Menu mode, the printer exits the Menu mode.

The Menu has the following 5 items.

(4-1) **Test Page**
Prints general information on printer settings and configuration.

(4-2) **Color Calibration**
Adjusts the toner density for each color independently or all colors simultaneously.

Calibration Offset :	Adjusts the density for all colors (CYAN, MAGENTA, YELLOW and BLACK) simultaneously. Setting a larger number provides darker colors and setting a smaller number provides lighter colors.
CYAN / MAGENTA / YELLOW / BLACK:	Adjusts the density for each color. Setting a larger number provides darker colors and setting a smaller number provides lighter colors.
Calibration Test Print :	Prints a Color Calibration Page with the current density settings.
Reset Calibration :	Setting "YES" resets the current settings to the default settings.

(4-3) System Setting

Configures the printer.

Energy Star : With Energy Star set to ON, the printer enters the Energy Star mode when the printer is idle for 30 minutes.

Auto Continue : With Auto Continue set to ON, the printer automatically recovers from the following error conditions if no recovery operation is done for 10 seconds.

- Memory Overflow
- SCSI communication error

Data Timeout : With Data Timeout set to ON, the printer automatically returns to Ready status if the printer does not receive any data from a computer within the time period set in this selection.

(4-4) Network

Sets the addresses used in TCP / IP Protocol.

This menu appears when the optional network card is installed. When setting the address, use the ◁ **/CANCEL** button to move the cursor and the △ **/CONTINUE** button to increase the numerical value.

(4-5) Maintenance

Displays the number of pages, indicating when the following supplies need to be replaced.

The following table lists the average life of each supply, (based on a 5% image area).

Supplies	Average life
Imaging Unit*	60,000 images
Transfer Unit	80,000 pages

Supplies	Average life
Fuser Unit*	31,000 images
Oil Supply Roll*	15,500 pages

*When a supply is replaced with a new one, the printer will automatically reset its page counter to 0.

(5) ◁ /CANCEL button

When the printer is in the Menu mode, pressing this button:

- Displays the previous menu, item or selection.
- Decreases the current numerical value of the selection.
- Moves the cursor to left.

(6) △ /CONTINUE button

- When an error message such as "Memory Overflow" or "SCSI Communication Error" is displayed on the LCD, press this button to recover from an error situation.
- When the printer is in the Menu mode, pressing this button:
  —Displays the next menu, item or selection.
  —Increases the current numerical value of the selection.

(7) ENTER button

This button is effective only when the printer is in the Menu mode. Pressing this button:

- Enters a Sub Menu.
- Activates a selection.

1.4 Rear Panel

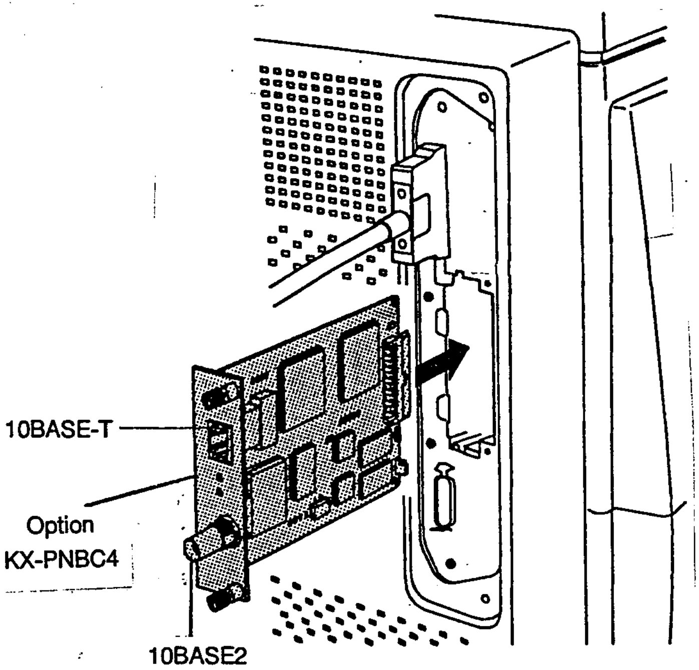
Connectors

The rear panel is equipped with the following interface connectors.

a) Standard parallel (high density connector)
b) SCSI high density connector (for Scanner or PC)

With the addition of a network card, the printer can feature either of these groups of connectors:

- ThinNet (10base2) and Twisted Pair (10baseT) Ethernet connectors. This is Option KX-PNBC4.



Network card LEDs (Network card is optional.)

Two LEDs on the face of the optional network card verify LAN connection and network activity.

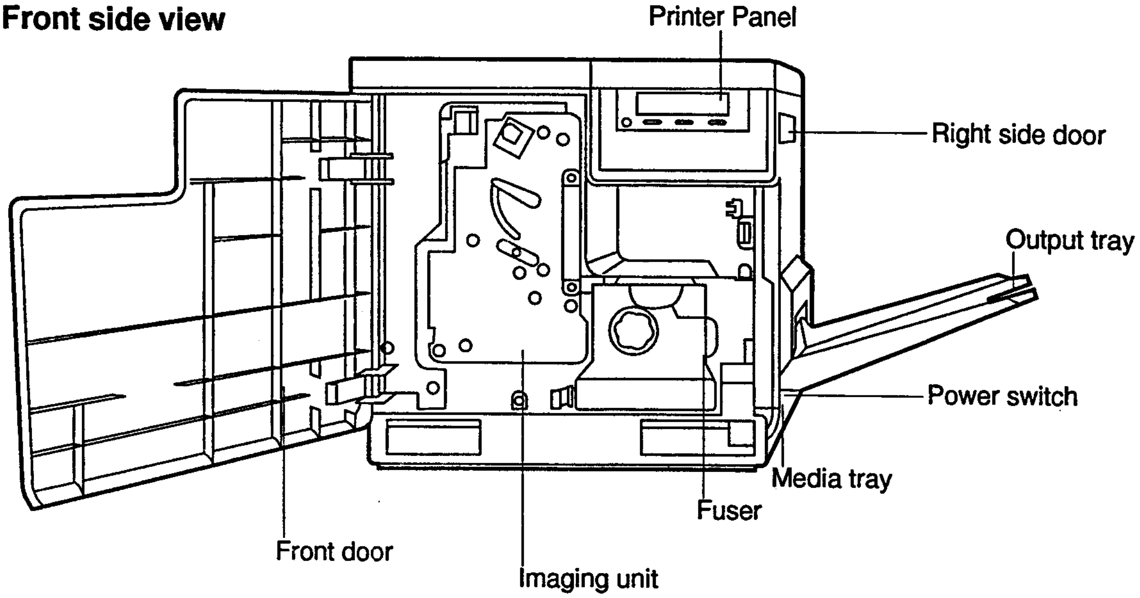
Ethernet

The table lists the conditions indicated by the LINK and NET ACT display LEDs on an Ethernet printer server.

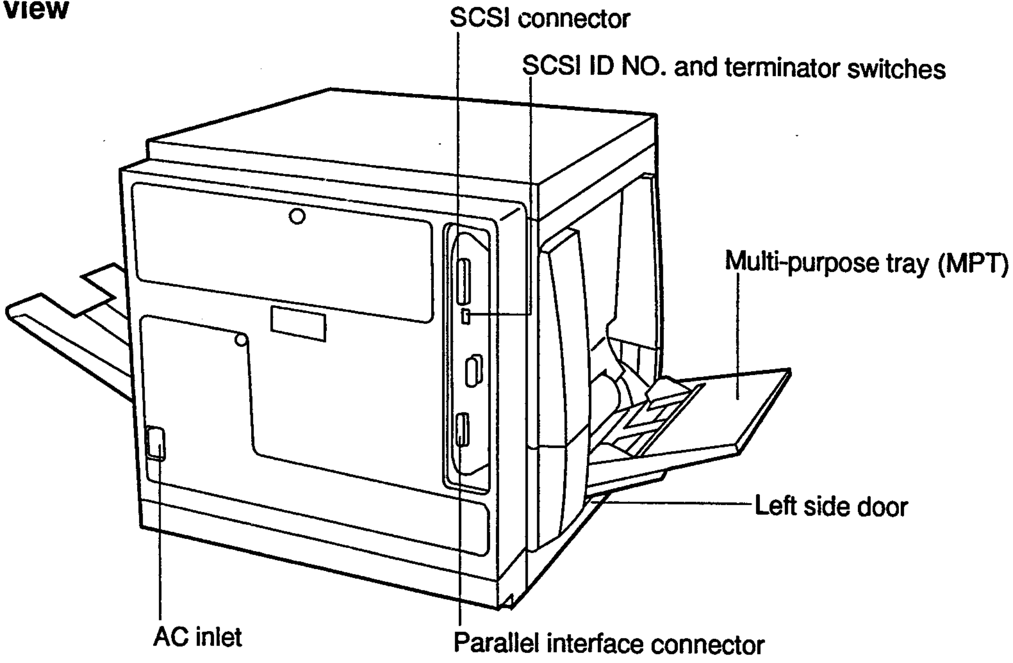
Condition	LINK Yellow	NET ACT Green
LAN not connected	off	off
BNC connected	off	random blinking
UTP connected	on	random blinking

1.5 Parts Identification

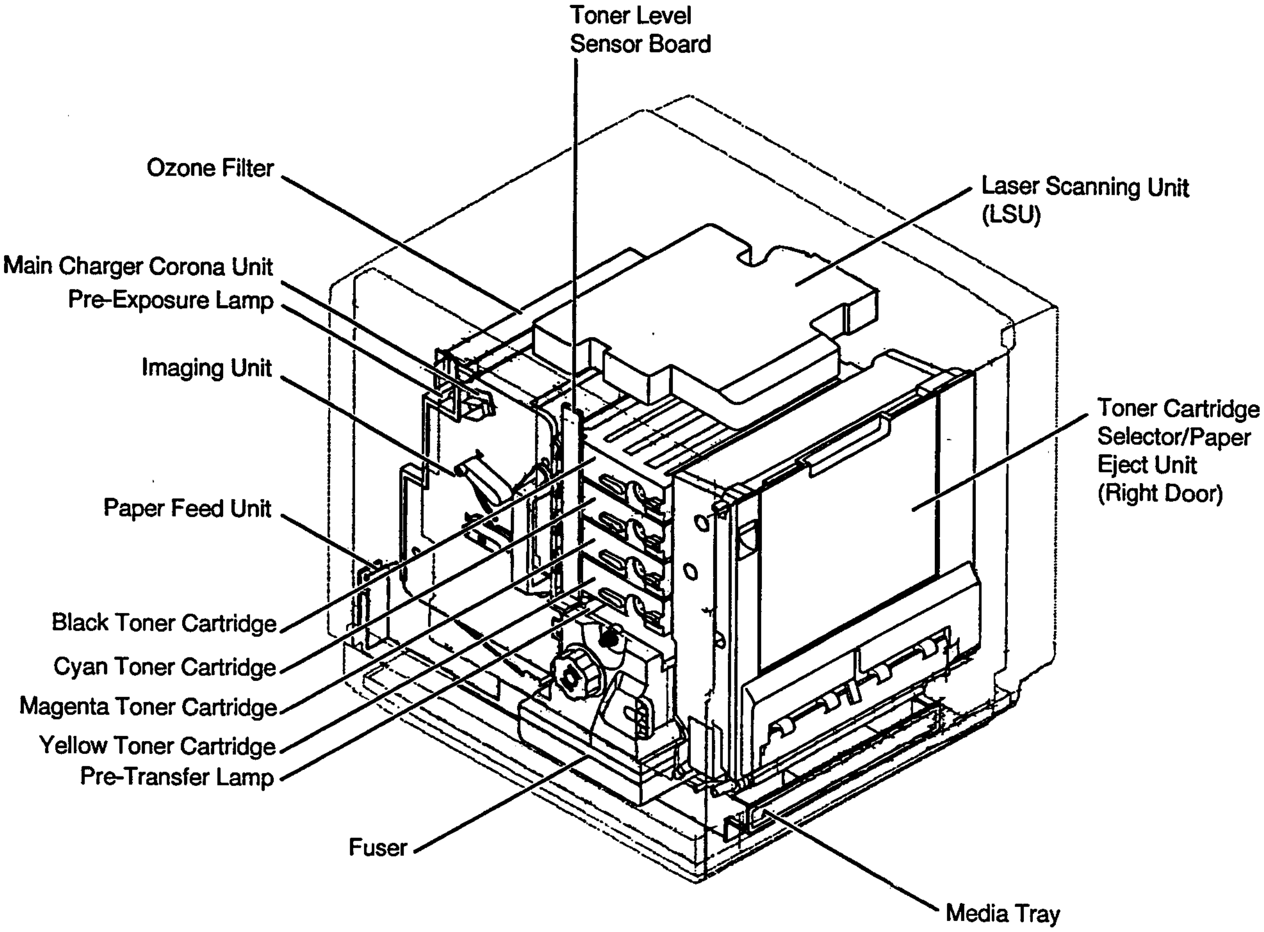
Front side view


Printer Panel
Right side door
Output tray
Power switch
Media tray
Fuser
Front door
Imaging unit

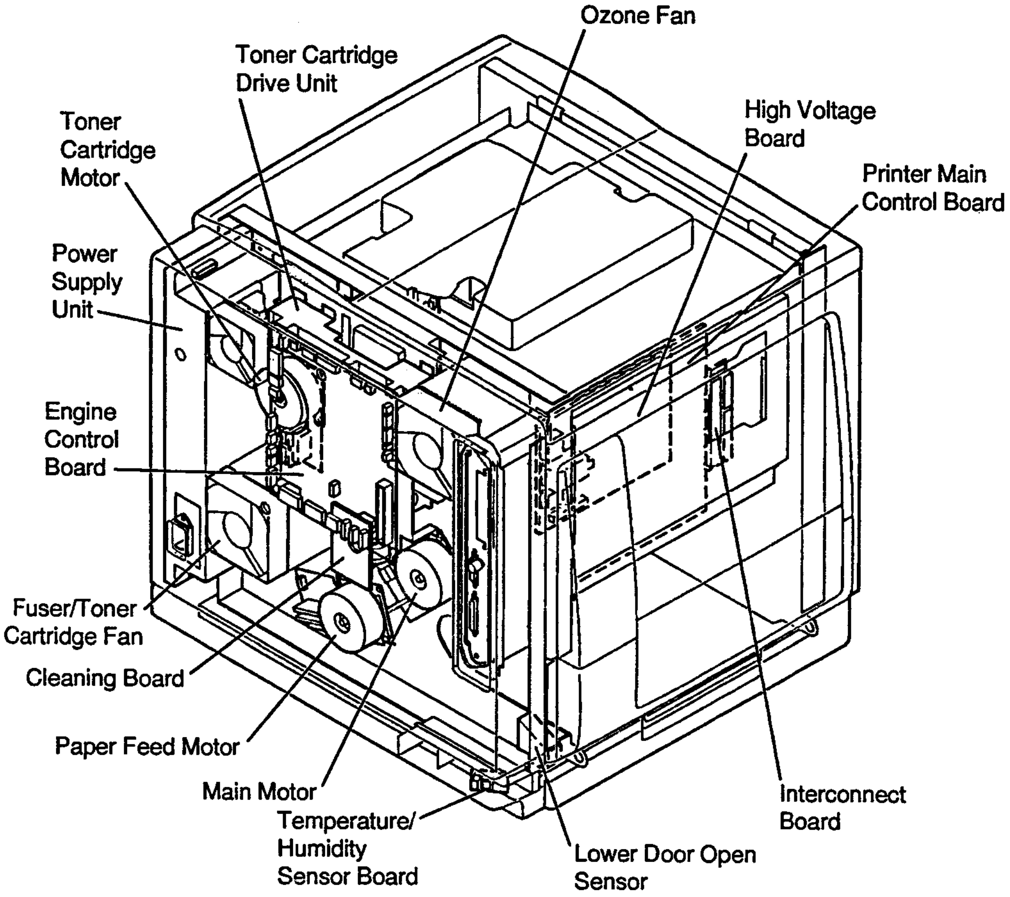
Rear side view


SCSI connector
SCSI ID NO. and terminator switches
Multi-purpose tray (MPT)
Left side door
AC inlet
Parallel interface connector

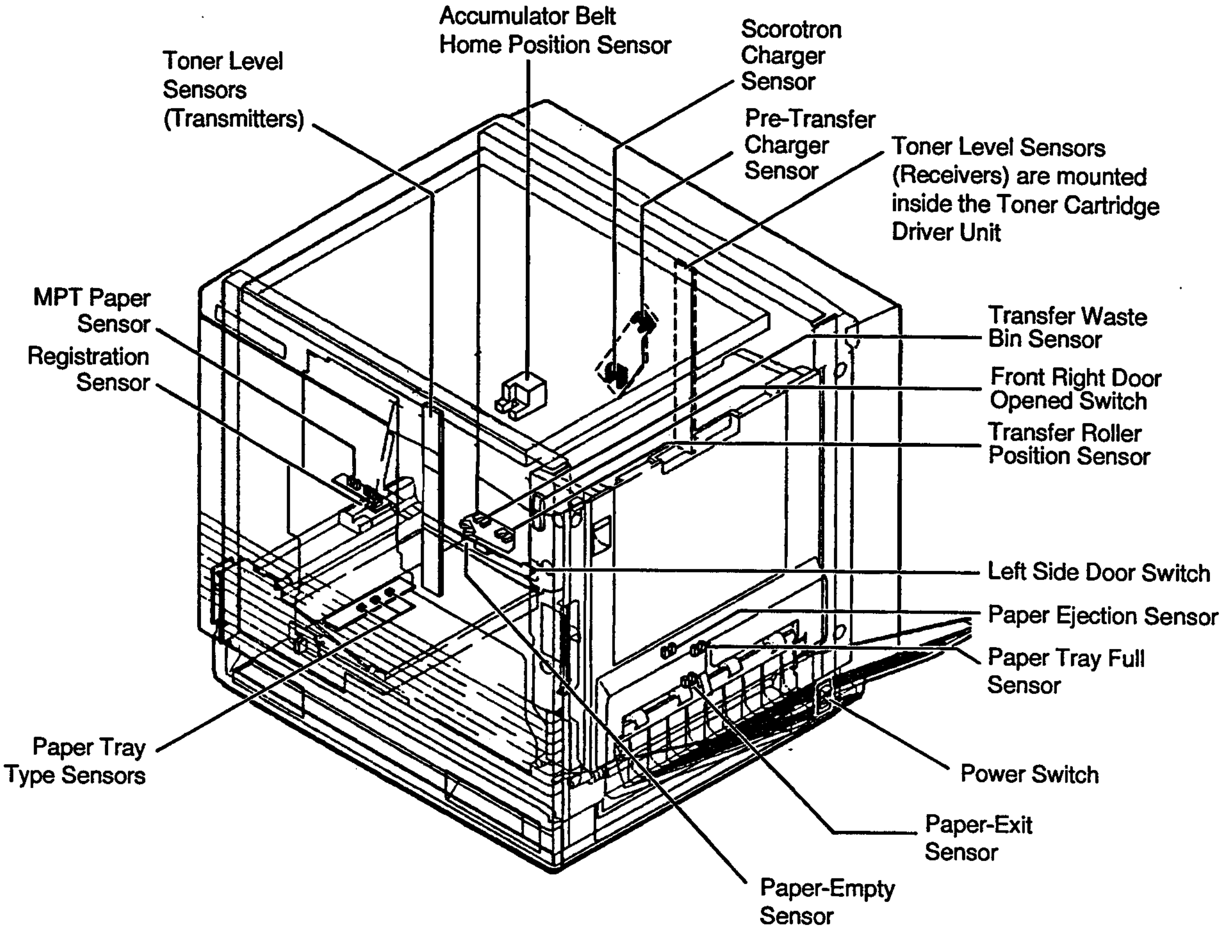
1.6 Component Layout


Toner Level Sensor Board
Ozone Filter
Laser Scanning Unit (LSU)
Main Charger Corona Unit
Pre-Exposure Lamp
Imaging Unit
Toner Cartridge Selector/Paper Eject Unit (Right Door)
Paper Feed Unit
Black Toner Cartridge
Cyan Toner Cartridge
Magenta Toner Cartridge
Yellow Toner Cartridge
Pre-Transfer Lamp
Fuser
Media Tray

1.7 Electrical Components


Ozone Fan
Toner Cartridge Drive Unit
Toner Cartridge Motor
High Voltage Board
Printer Main Control Board
Power Supply Unit
Engine Control Board
Fuser/Toner Cartridge Fan
Cleaning Board
Paper Feed Motor
Main Motor
Temperature/ Humidity Sensor Board
Lower Door Open Sensor
Interconnect Board

1.8 Switches/Sensors Identification


Accumulator Belt Home Position Sensor
Scorotron Charger Sensor
Toner Level Sensors (Transmitters)
Pre-Transfer Charger Sensor
Toner Level Sensors (Receivers) are mounted inside the Toner Cartridge Driver Unit
MPT Paper Sensor
Registration Sensor
Transfer Waste Bin Sensor
Front Right Door Opened Switch
Transfer Roller Position Sensor
Left Side Door Switch
Paper Ejection Sensor
Paper Tray Full Sensor
Paper Tray Type Sensors
Power Switch
Paper-Exit Sensor
Paper-Empty Sensor

2. Installation, Setup, and Repacking

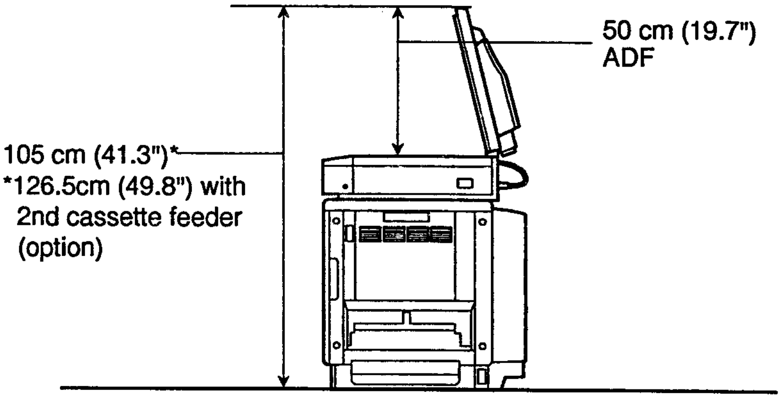
2.1 Installation Requirements

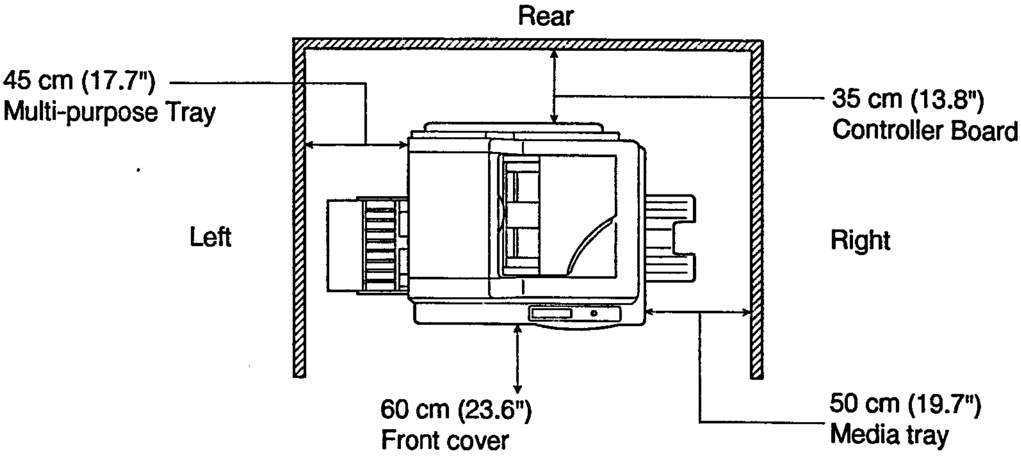
2.1.1 Environment

1.Temperature Range :10°C~32.5°C (50°F~90.5°F)(Temperature fluctuation ± 10°C per hour or less)
2.Humidity Range :20% RH~80% RH (Humidity fluctuation ± 20°C per hour or less)
3.Weight :47.5 kg (105 lbs.)
4.Place the unit on a stable, level surface.
5.Do not install the unit under the following conditions.
  a. Extremely high or low temperature
  b. Extremely high or low humidity
  c. Direct exposure to sunlight
  d. Areas of high dust concentration
  e. Areas of poor ventilation
  f. Areas exposed to chemical fumes
  g. Areas with extreme vibration
  h. Directly in air conditioning flow

2.1.2 Minimum Space Requirements

1. Right :50cm (19.7")
2. Left :45cm (17.7")
3. Rear :35cm (13.8")


50 cm (19.7")
ADF
105 cm (41.3")*
*126.5cm (49.8") with
2nd cassette feeder
(option)


Rear
45 cm (17.7")
Multi-purpose Tray
35 cm (13.8")
Controller Board
Left
Right
60 cm (23.6")
Front cover
50 cm (19.7")
Media tray

2.2 Setup

2.2.1 Removing the Packing Material

1. Remove the plastic bag from the printer.
2. Remove any adhesive tape that holds the output tray against the printer.

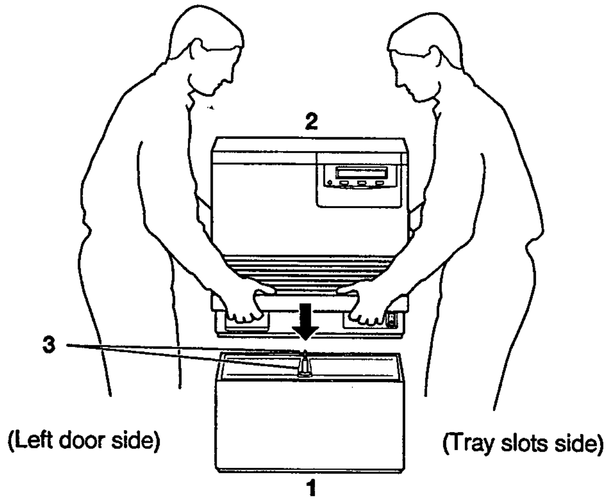
Note: Please do not throw away the packing materials. They may be required to ship or transport the printer. To provide optimum print quality, the unit must be kept upright and level at all times.

2.2.2 Installing the Optional 2nd Cassette Feeder

Warning: The printer weighs about 47.88 kg (105.6 lbs.) and the 2nd Cassette Feeder weighs about 14.4 kg (36.3 lbs.). Observe standard precautions for lifting heavy objects.

The printer is not permanently attached to the 2nd Cassette Feeder. When moving the printer, turn the power 055 and remove the power cord, then move the pieces separately; moving the printer incorrectly may damage it and may cause personal injury.

1. Place the 2nd Cassette Feeder on a solid table or cart selected for the printer.
2. Place the printer on top of the 2nd Cassette Feeder. Always keep the printer upright.
3. Make sure that the left and right alignment pins fit in the holes in the base of the printer.



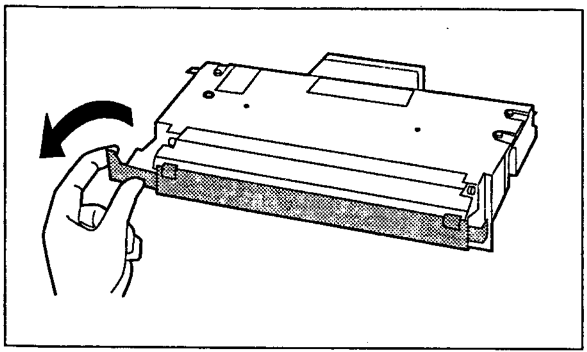
2.2.3 Installing the Toner Cartridges

Please read these instructions before using the printer.

Note:

- The toner cartridges that are shipped with the printer are starter cartridges. They are installed in exactly the same manner as the standard cartridges; the only difference is that the starter cartridges have less toner. (The page life expectancy is 3,000 pages, which is based on a 5% image area.)

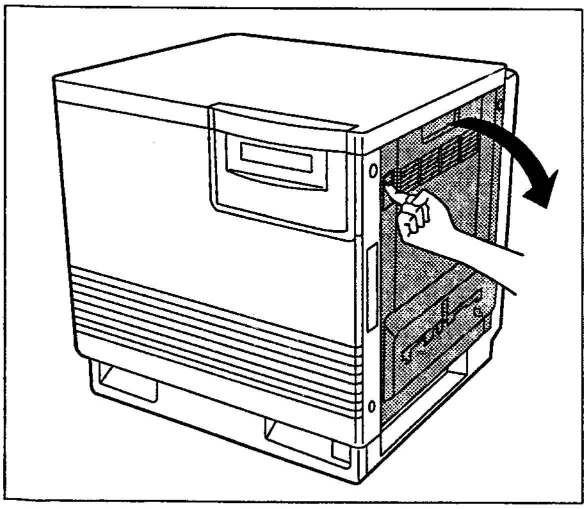
1. Remove the packaging from the toner cartridge.
2. Remove the shipping cover from the cartridge.



Caution:

- Do not tilt the cartridge to avoid the toner spill.

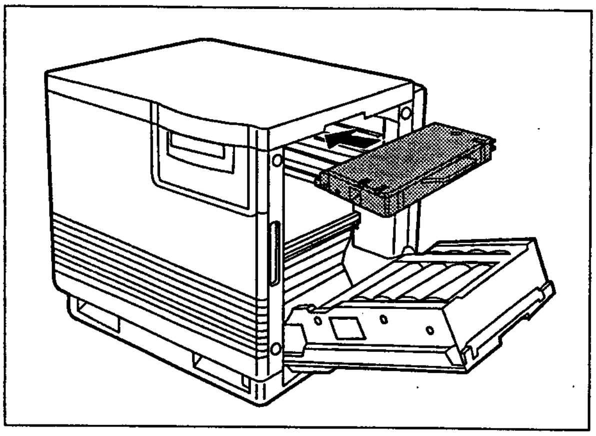
3. Open the printer's right side door.



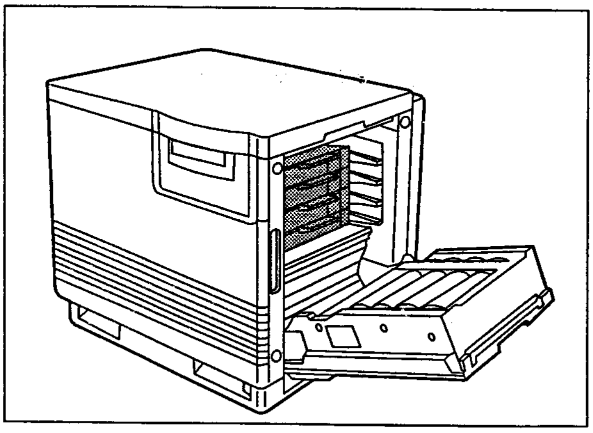
Caution:

- Do not leave the right side door open for a long time; the imaging unit is exposed to light and will be damaged.

4. Insert the toner cartridge in the appropriately labeled slot. From top to bottom, the cartridge order is BLACK, CYAN, MAGENTA, and YELLOW.



5. Repeat steps 1, 2 and 4 for each toner cartridge. When all the toner cartridges have been installed, go to step 6.



6. Close the right side door.

Note:

- Save all packing material for shipping purposes.

2.2.4 Adding Paper or Transparencies

The printer uses five different trays:

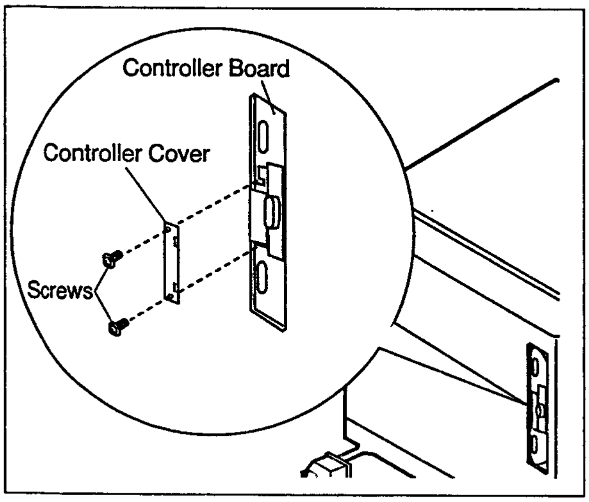
Tray	Size
A4 Paper	8.27" x 11.7" (210 x 297 mm)
A4 Transparency	8.27" x 11.7" (210 x 297 mm)
Letter Paper	8.5" x 11" (216 x 279 mm)
Letter Transparency	8.5" x 11" (216 x 279 mm)
Legal paper	8.5" x 14" (216 x 356 mm)

Notes:
- Make sure that correct media is loaded. Each tray is designed and labeled for only paper or transparency. If the wrong media type is loaded in a tray, an error message will be displayed when printing is attempted.
- If the 2nd Cassette Feeder is installed and the automatic tray-switching feature (for example, for a large print job) is used, make sure that all trays in the printer at any one time are the same media type and size.
- To optimize the printer's performance, always use clean, unused media.
- Be careful not to leave fingerprints on the media, which can result in a smudged print.
- Reusing media that has been fed through the printer (for example, after jams or if the media is ejected without being printed) can reduce the life of the consumables and paper path components.

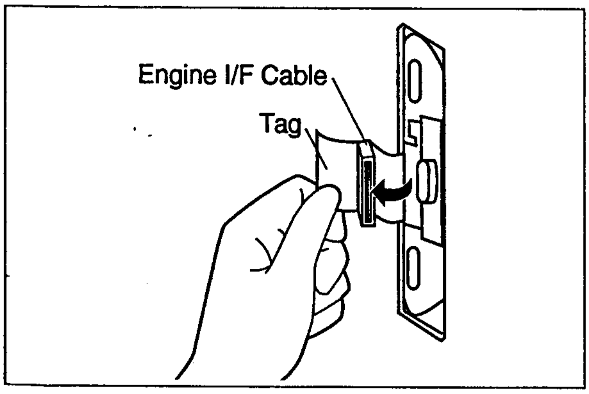
2.3 Installing RAM SIMMs (Option)

1. Turn off the printer. Do not unplug the printer; this preserves a ground path to dissipate static charges.

2. Remove the two screws and the connector cover.



3. Hold the tag and pull out the engine I/F cable from the controller board.

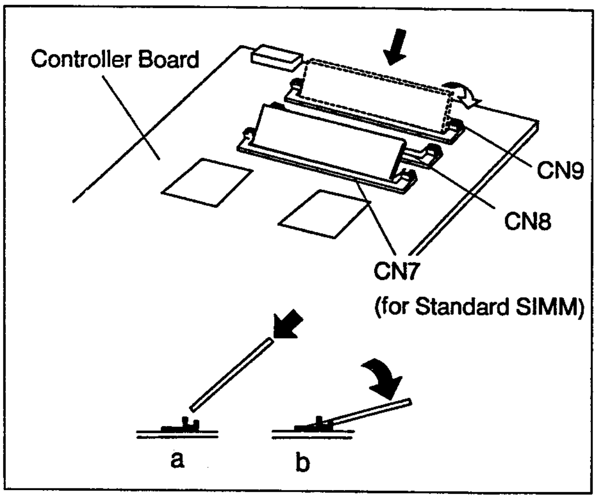


4. Remove the two screws.

5. While holding the engine I/F cable toward the left, pull out the controller board.

6. When installing a single RAM SIMM. Insert a memory module in connector CN8 or CN9 (a) and tilt the module down until it locks in place (b). When the SIMM is properly inserted, a tab on each end of the connector slips into a hole on each end of the RAM SIMM. Also, a pawl on each end of the connector latches around each end of the RAM SIMM to lock it in place. Go to step 8.

7. When installing two RAM SIMMs. Insert the appropriate memory module in connector CN8 and CN9 (a) and tilt the module down until it locks in place (b). When the SIMM is properly inserted, a tab on each end of the connector slips into a hole on each end of the RAM SIMM. Also, a pawl on each end of the connector latches around each end of the RAM SIMM to lock it in place.



8. While holding the engine I/F cable toward the left, reinstall the controller board.

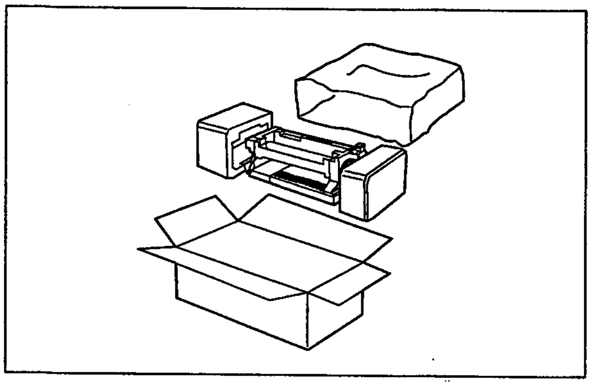
9. Reinstall the two screws.

10. Connect the engine I/F cable to the controller board.

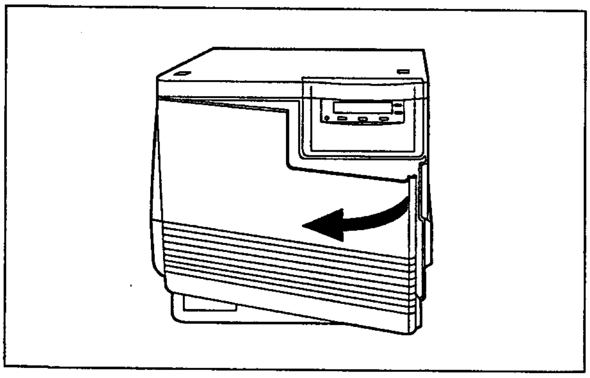
11. Reinstall the connector cover and the two screws.

2.4 Replacing the Fuser Unit

1. Remove the new fuser from its packaging; keep the fuser upright.



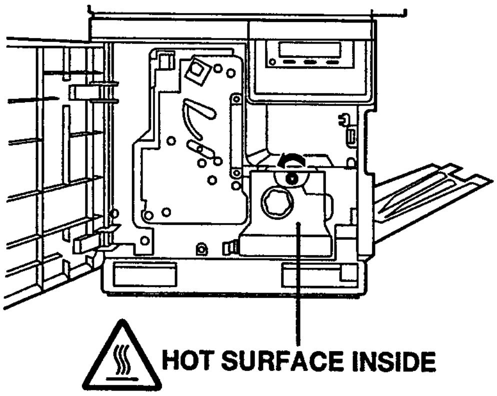
2. Open the front door.



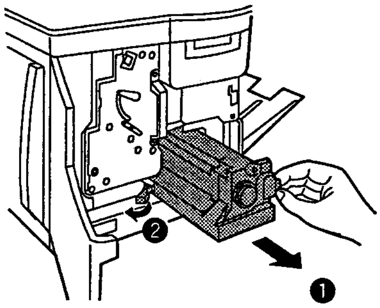
3. Turn the small green thumbscrew counterclockwise to unlock the fuser.

Caution:

- The fuser is hot; to avoid personal injury, wait 10 minutes for the fuser to cool before touching it.



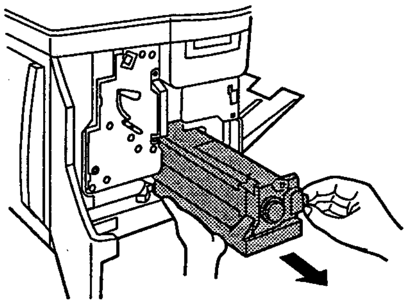
4. ❶ Grasping the green tab on the right, slide the fuser out until the safety catch stops it.
   ❷ Press the green lever on the left to release the safety catch.



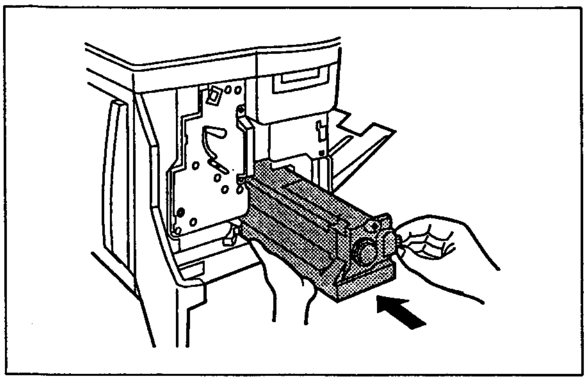
5. Hold the fuser as shown below, and slide it out of the printer.
   - Dispose of the fuser as normal office waste.

   Caution:

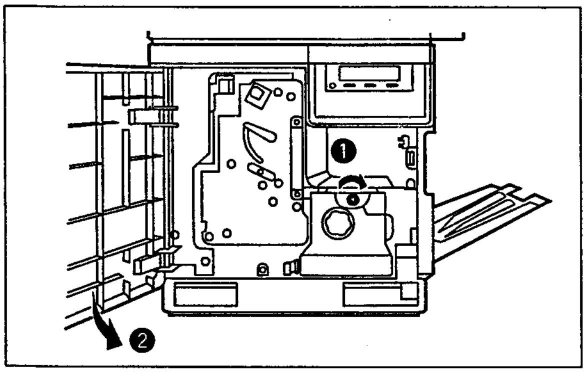
   - The fuser weighs approximately 3.1 kg (6.8 lbs.). Take care when handling it.



6. Insert the new fuser into the printer.

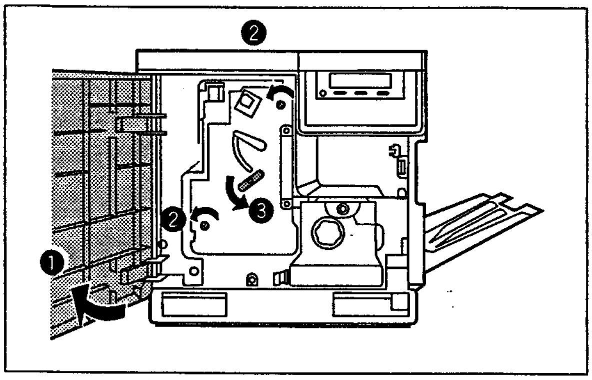


7. ❶ Turn the small green thumbscrew clockwise to lock the fuser.
   ❷ Close the front door.



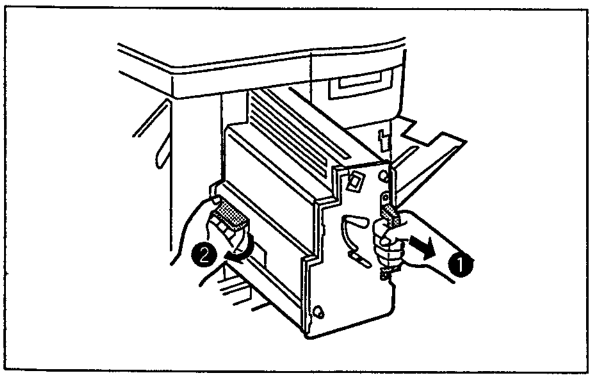
2.5 Replacing the Imaging Unit

1. ❶ Open the front door.
   ❷ Loosen the two thumbscrews by turning them counterclockwise.
   ❸ Turn the lower green lever 180° counterclockwise.



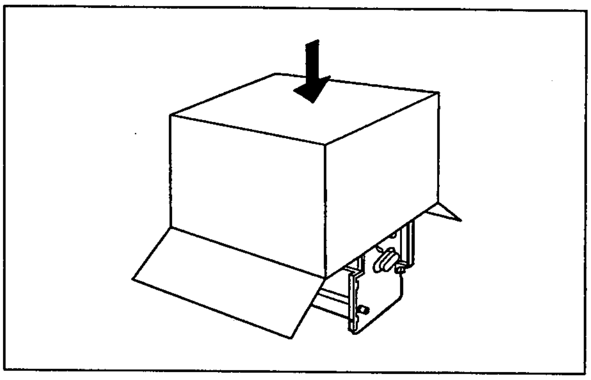
2. ❶ Grasping the front green handle, slide the unit out until it catches.
   ❷ Lift up the green handle on the left. Pull the imaging unit out of the printer.

Caution:
- The imaging unit weighs approximately 6.5 kg (14.3 lbs.). Always use the handles when lifting it.

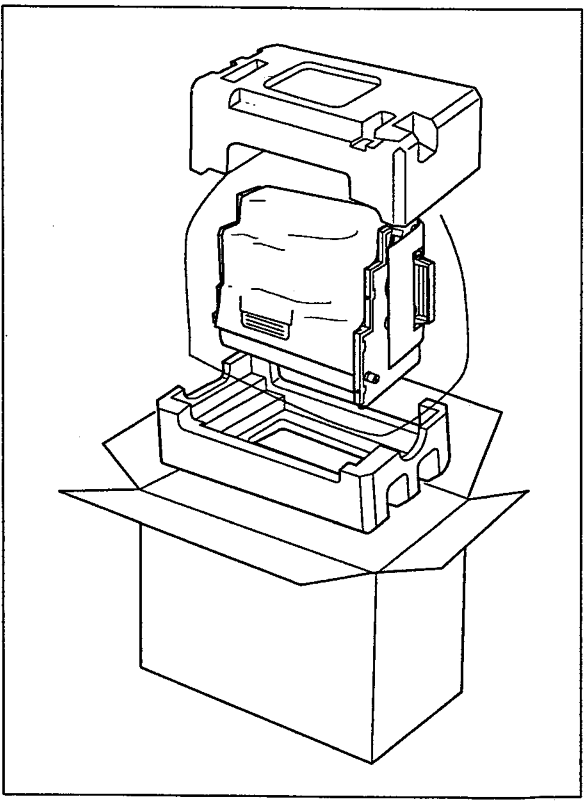


3. If the imaging unit is to be reinstalled, cover it with an empty box or place it in a dark cabinet to protect it from light exposure. If the unit is to be discarded, dispose of it as normal office waste.

Important:
- Do not expose the imaging unit to light for more than 45 seconds, or irreversible damage may result.

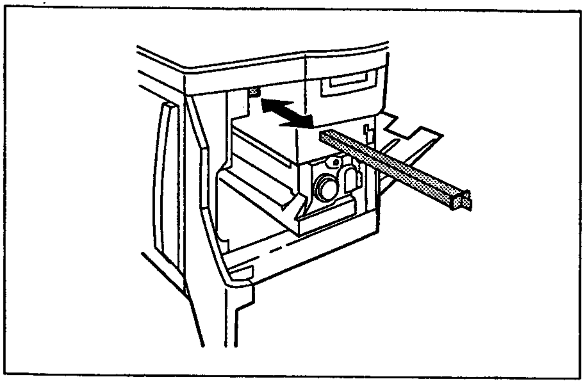


4. Remove the new imaging unit from the packaging, but leave the protective plastic sheet on the imaging unit until it is installed.
   •The imaging unit is extremely light-sensitive.

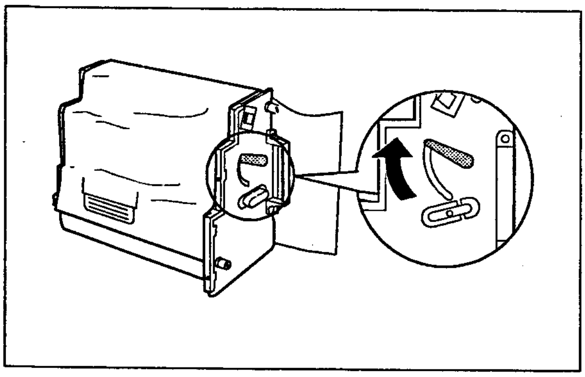


Note:
- Save all packing material for shipping purposes.

5. ❶ Remove the used filter by pulling it forward. Dispose of the filter as normal office waste.
   ❷ Insert the new filter.



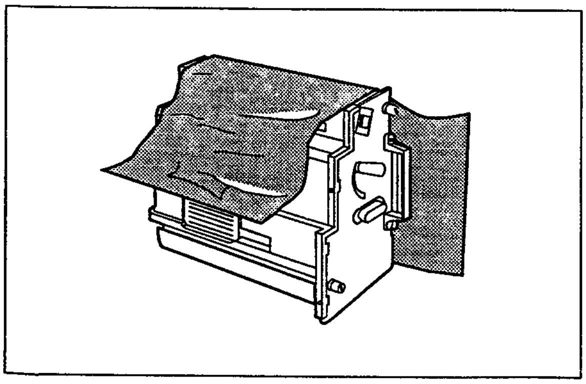
6. Turn the upper green lever clockwise until it stops.



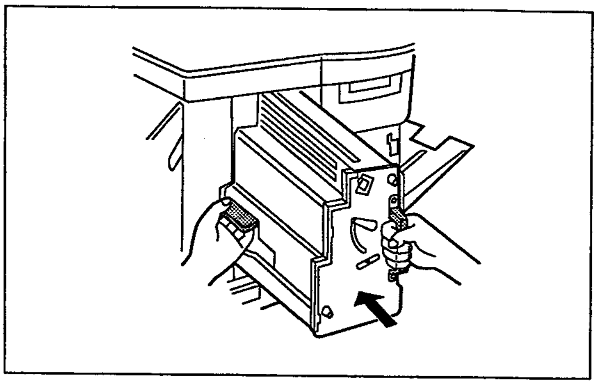
7. Remove the protective plastic sheet.

Important:

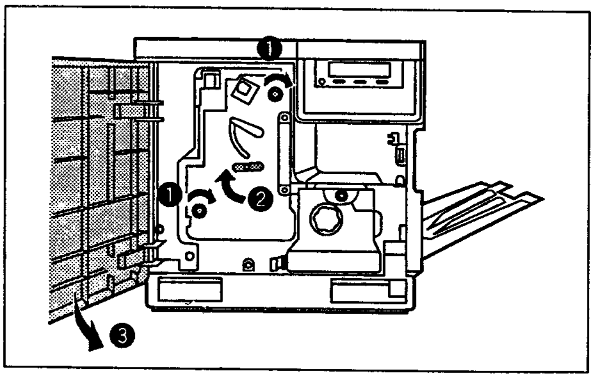
- Do not touch the green surface. Fingerprints may affect the print quality.
- Do not expose the imaging unit to light for more than 45 seconds, or irreversible damage may result.



8. Grasp the green handles and install the new unit into the printer. Release the left handle and push the unit in until it stops.



9. ❶ Turn the lower green lever clockwise 180° to lock the imaging unit.
   ❷ Tighten the two green thumbscrews by turning them clockwise.
   ❸ Close the front door.



2.6 Repacking

Prepare the unit before shipping.

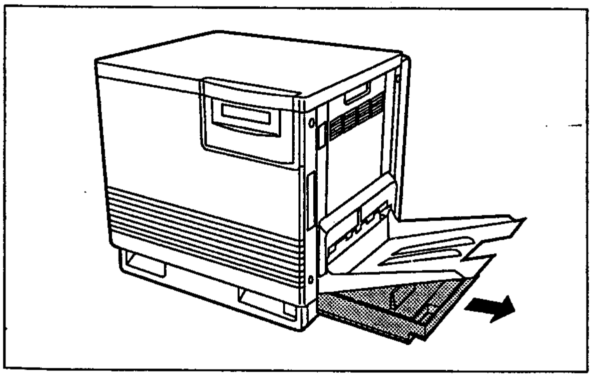
Note: It is highly recommended that users keep the original carton and ALL packing materials. Please follow these instructions when moving the printer.

- Please use the original carton and all of the original packing material.
- Improper repacking of the printer may result in a service charge to repair the unit or a cleaning charge to remove spilled toner.
- Since the printer uses dry toner, extreme care must be taken when handling. The printer should be handled in the upright (vertical) position.

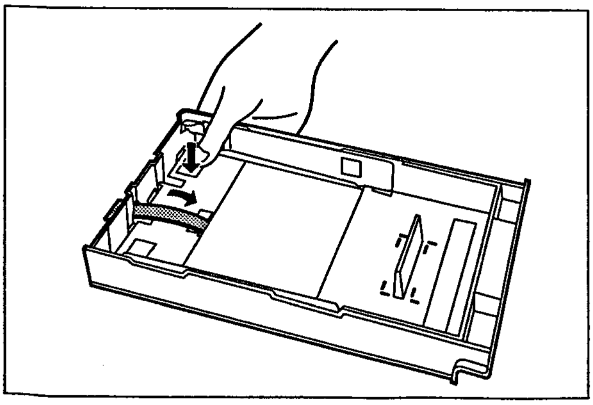
Material Required

- Original Printer, Accessory Cartons, and All Packing Materials
- Newspaper or drop cloth
- Shipping Tape and Scissors

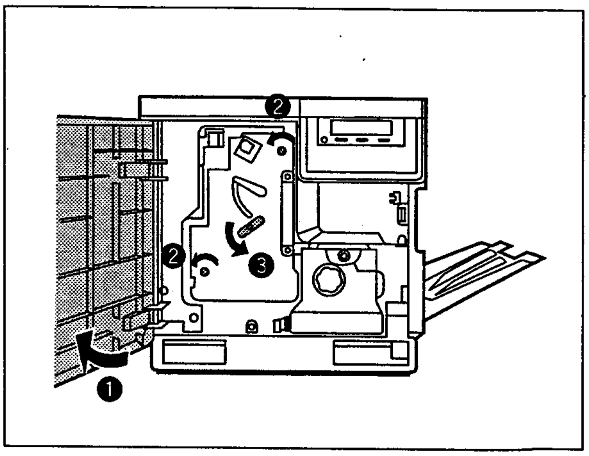
1. Turn off the printer; remove the power cord and all interface cables.
2. Remove the media tray(s) from the printer; remove the media from the tray(s).



3. Press down on a media tray's metal plate. Place the cardboard packing material into the media tray.



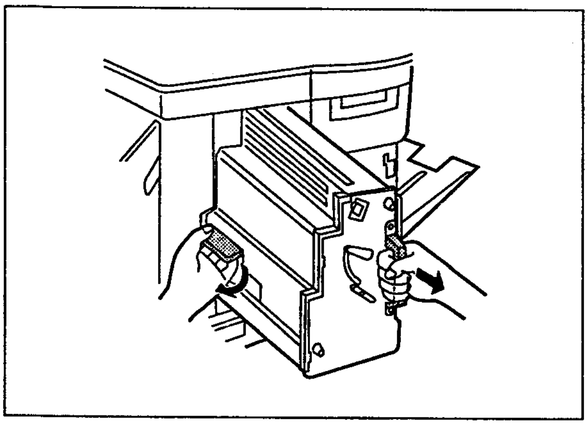
4. Reinsert the media tray into the printer; use adhesive tape to secure the tray to the printer.
5. If the other media trays are installed, repack them for shipping or storage in their original shipping boxes.
6. ❶ Open the printer's front door.
   ❷ Loosen the two thumbscrews by turning them counterclockwise.
   ❸ Turn the lower green lever 180° counterclockwise.



7. ❶ Grasping the front green handle, slide the unit out until it catches.
   ❷ Lift up the green handle on the left. Pull the imaging unit out of the printer.

Caution:

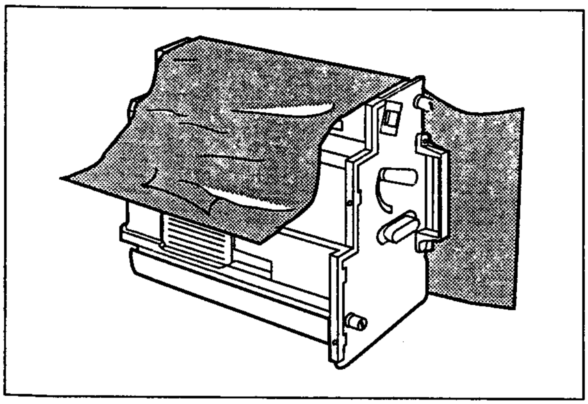
- The imaging unit weighs approximately 6.5 kg (14.3 lbs.). Always use the handles when lifting it.



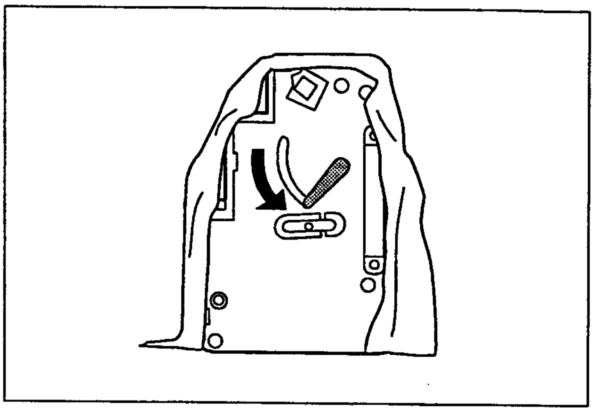
8. Wrap the imaging unit with a protective black plastic sheet.

Important:

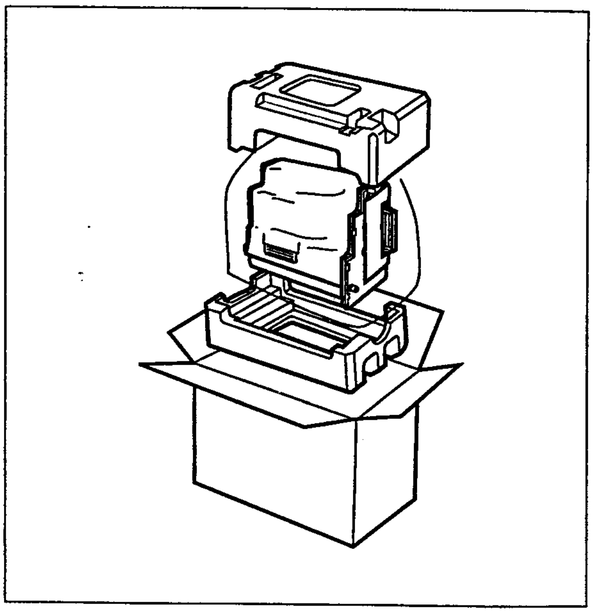
- Do not touch the green surface. Fingerprints may affect print quality.
- Do not expose the imaging unit to light for more than 45 seconds, or irreversible damage may result.



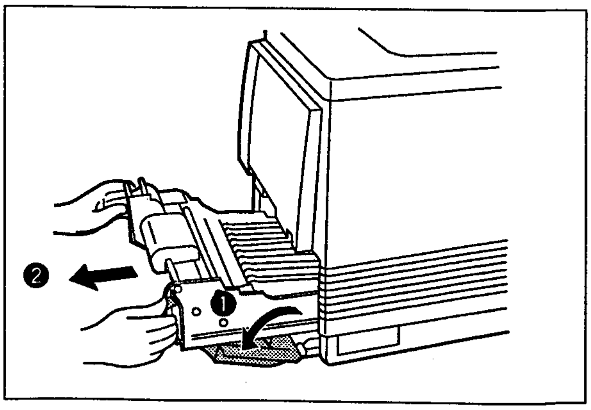
9. Move the upper lever 90° counterclockwise; this is necessary to protect the imaging unit during shipment.



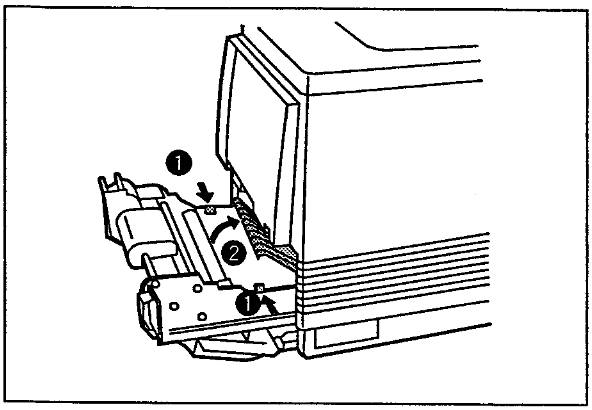
10. Insert the imaging unit into the packaging.



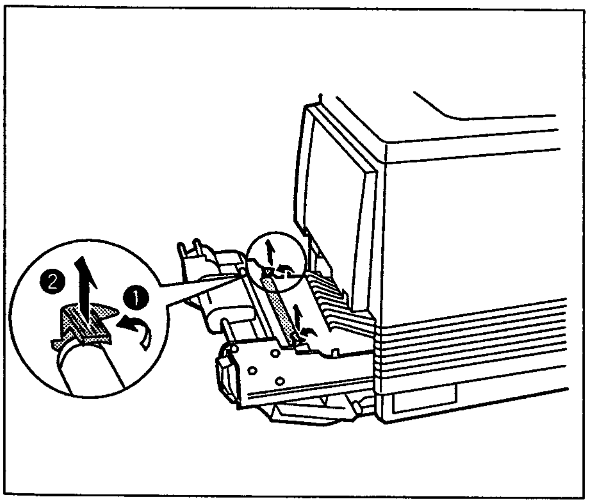
11. ❶ Open the left side door.
    ❷ Using the green handles, slide the paper feeder out.



12. ❶ Push in on green tabs to unlock the cover.
    ❷ Raise the cover until it catches in the open position.



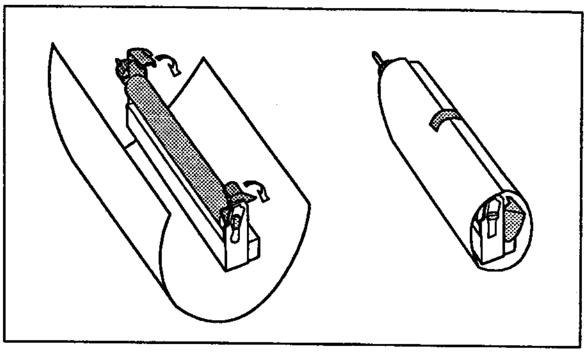
13. ❶ Rotate the transfer roller's green handles up.
    ❷ Lift out the transfer roller/waste bin.



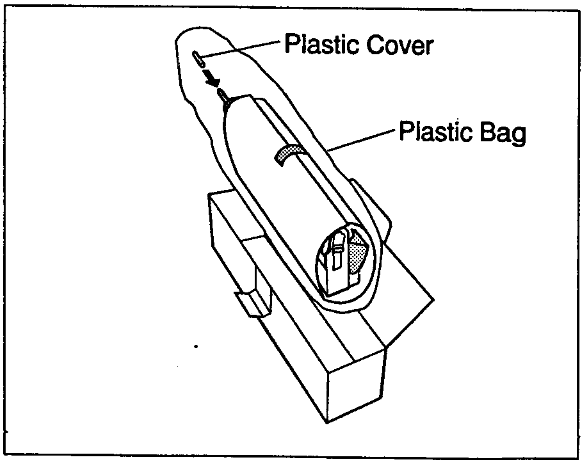
14. Rotate the handles down and wrap the transfer unit with a piece of paper and adhesive tape.

Note:

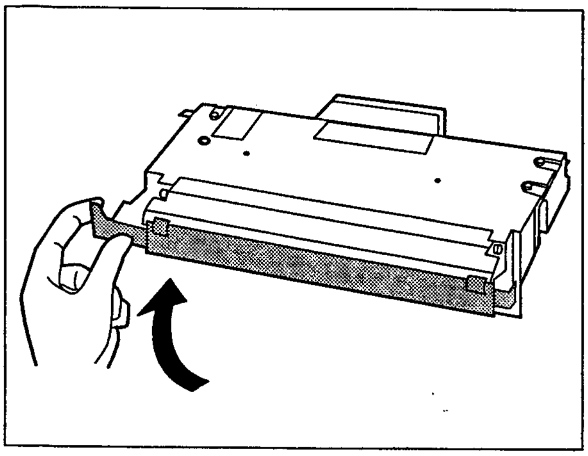
•Do not touch or bump the roller; it can damage the roller.



15. Install the plastic cover and insert the transfer unit into a plastic bag and seal the end tightly. Install the transfer unit into the packaging.



16. Remove the four toner cartridges; install the protective cover for each cartridge; repack them for shipping or storage in their original shipping boxes.



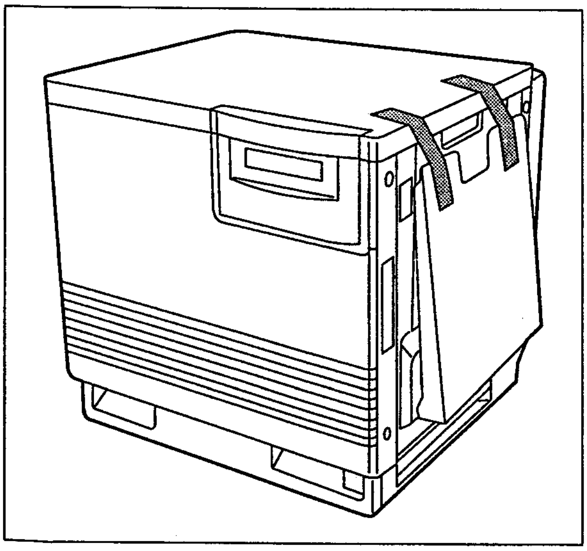
17. Wipe off any loose toner in and around the printer.

Note:

- If a toner vacuum is available, it is the best tool for cleaning spilled toner. Do not use a standard office vacuum; the toner will not be retained by typical vacuum dust collectors.

18. Close all printer doors and secure them with adhesive tape.

19. Raise the output tray and secure it to the printer with adhesive tape.



If a 2nd Cassette Feeder is installed, go to Step 21.

20. If a 2nd Cassette Feeder is installed:

   a. Lift the printer up and away from the 2nd Cassette Feeder.

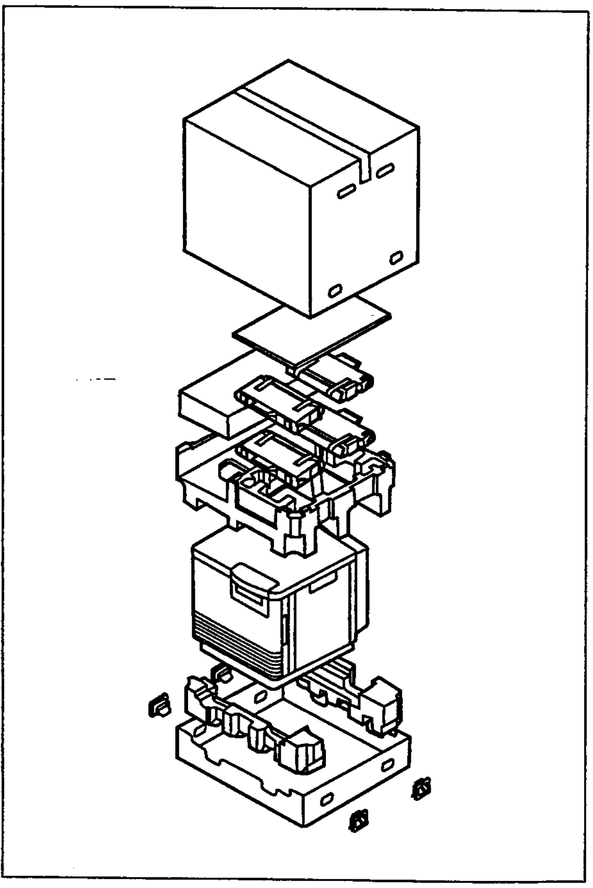
Safety Caution:

- The printer weighs approximately 41.38 kg. (91.2lbs.) and the 2nd Cassette Feeder weighs 14.32 kg (31.6 lbs.). Observe standard precautions for lifting heavy objects.

   b. Repack the 2nd Cassette Feeder in its original shipping box.

21. Repack any other accessories in the original shipping box.

22. Repack the printer in the original shipping box. Make sure that the printer is upright and level when moving.



3. Operation

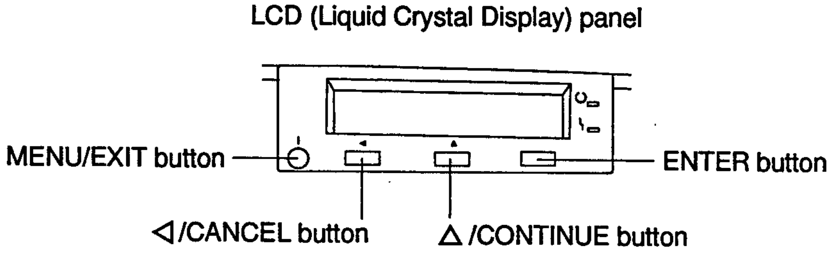
3.1 Menu Mode

This section covers the basic operation of this model.

1. Plug in the power cord and connect an interface cable to the laser printer.
2. Turn on the power switch. The LCD displays "Initializing", then "Ready".
3. Press the MENU/EXIT button to enter the Menu mode.

The following chart shows all functions of MENU that are displayed when selecting functions.

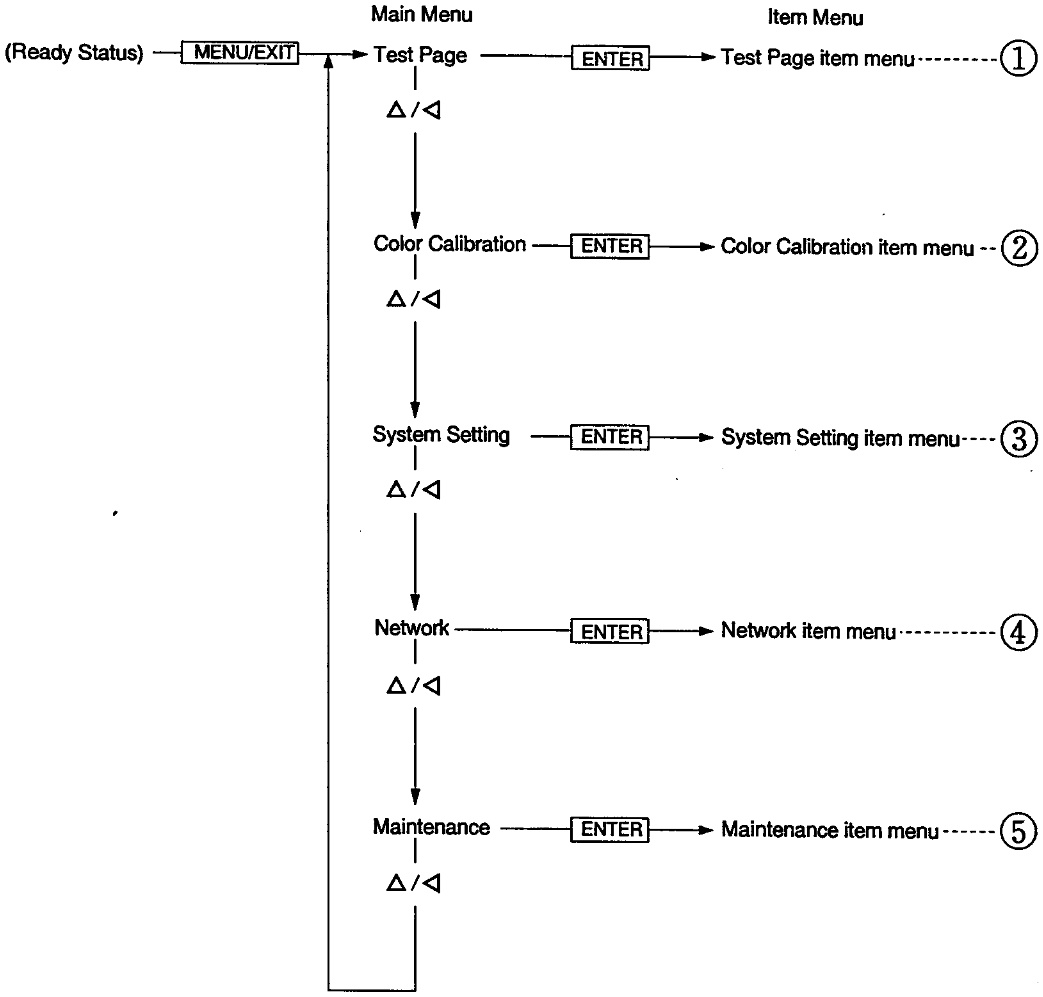
Printer Panel


LCD (Liquid Crystal Display) panel
MENU/EXIT button
ENTER button
◁/CANCEL button
△/CONTINUE button

3.1.1 Main Menu

ENTER : Press the ENTER button.

△/◁ : Press the △ or◁ button.


Main Menu
Item Menu
(Ready Status)
MENU/EXIT
Test Page
ENTER
Test Page item menu ①
△/◁
Color Calibration
ENTER
Color Calibration item menu ②
△/◁
System Setting
ENTER
System Setting item menu ③
△/◁
Network
ENTER
Network item menu ④
△/◁
Maintenance
ENTER
Maintenance item menu ⑤
△/◁

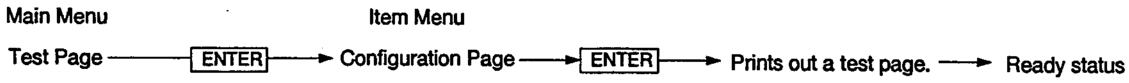
3.1.2 Item Menu

MENU/EXIT : Press the MENU/EXIT button.

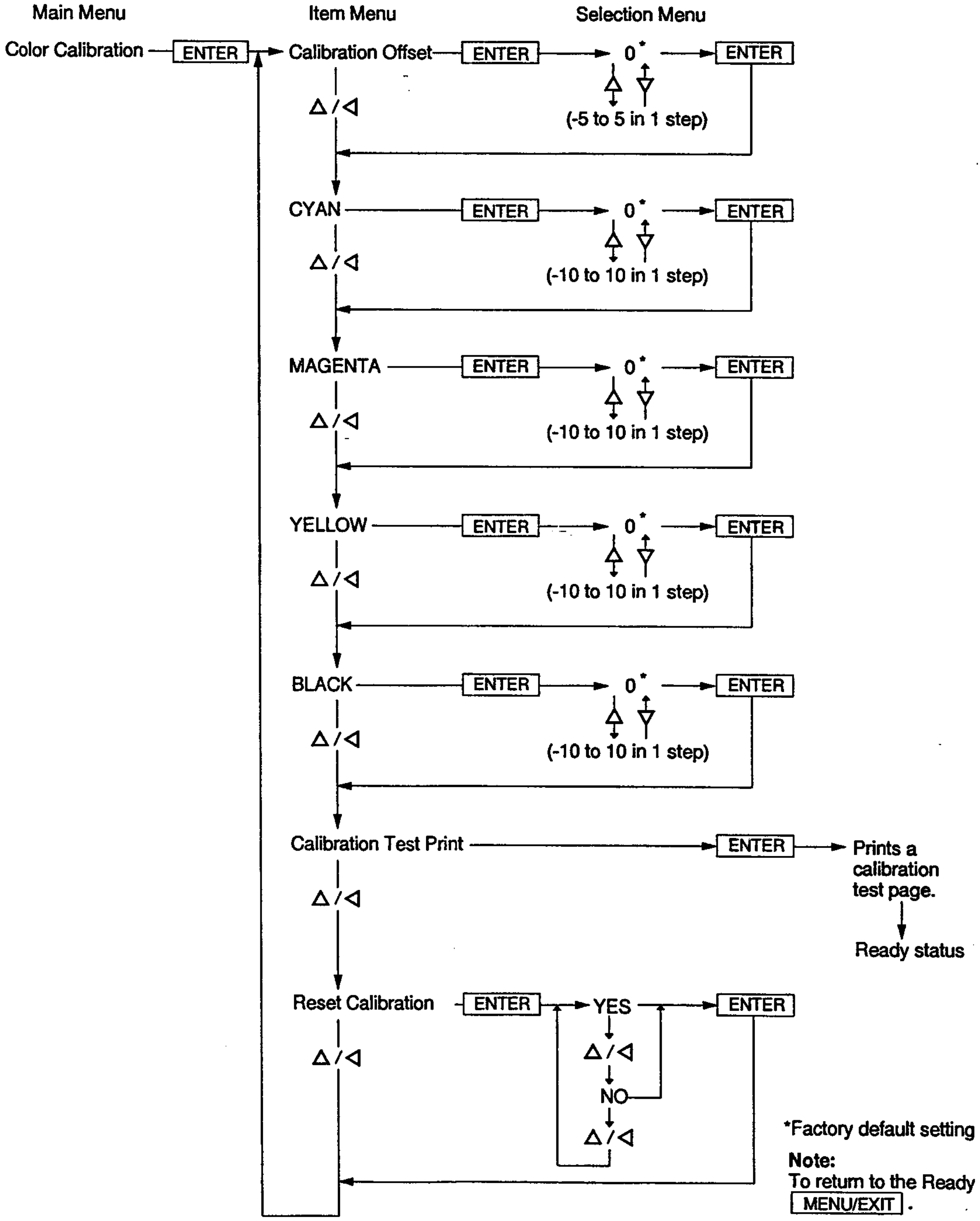
ENTER : Press the ENTER button.

△/◁ : Press the △ or◁ button.

①Test Page item menu


Main Menu
Item Menu
Test Page
ENTER
Configuration Page
ENTER
Prints out a test page.
Ready status

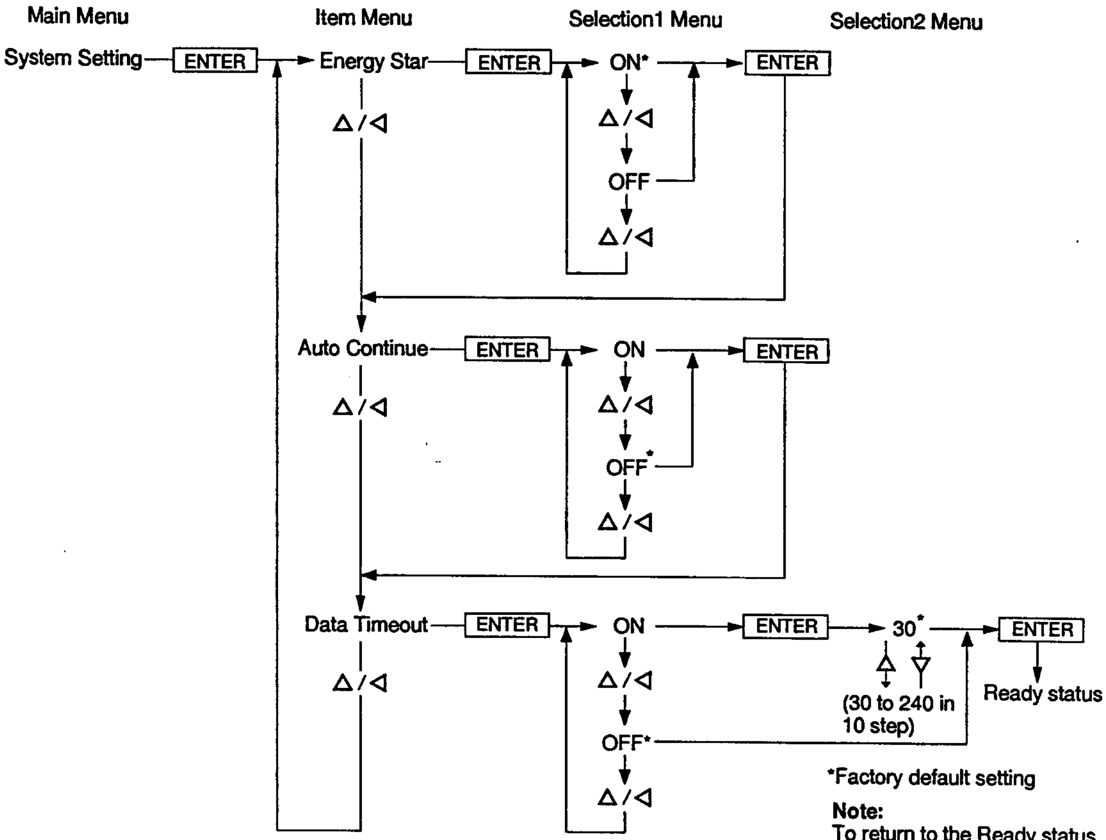
②Color Calibration item menu


Main Menu
Item Menu
Selection Menu
Color Calibration
ENTER
Calibration Offset
ENTER
0*
ENTER
△/◁
(-5 to 5 in 1 step)
CYAN
ENTER
0*
ENTER
△/◁
(-10 to 10 in 1 step)
MAGENTA
ENTER
0*
ENTER
△/◁
(-10 to 10 in 1 step)
YELLOW
ENTER
0*
ENTER
△/◁
(-10 to 10 in 1 step)
BLACK
ENTER
0*
ENTER
△/◁
(-10 to 10 in 1 step)
Calibration Test Print
ENTER
Prints a calibration test page.
Ready status
△/◁
Reset Calibration
ENTER
YES
ENTER
△/◁
NO
△/◁
△/◁

*Factory default setting

Note:
To return to the Ready status, press MENU/EXIT .

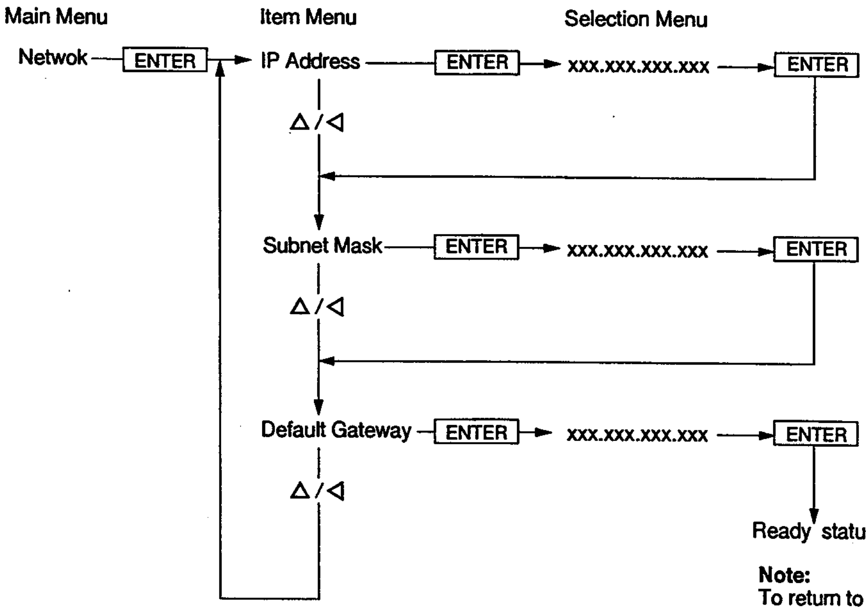
③System Setting item menu


Main Menu
Item Menu
Selection1 Menu
Selection2 Menu
System Setting
ENTER
Energy Star
ENTER
ON*
ENTER
△/◁
△/◁
OFF
△/◁
Auto Continue
ENTER
ON
ENTER
△/◁
△/◁
OFF*
△/◁
Data Timeout
ENTER
ON
ENTER
30*
ENTER
△/◁
△/◁
(30 to 240 in 10 step)
Ready status
OFF*
△/◁

*Factory default setting

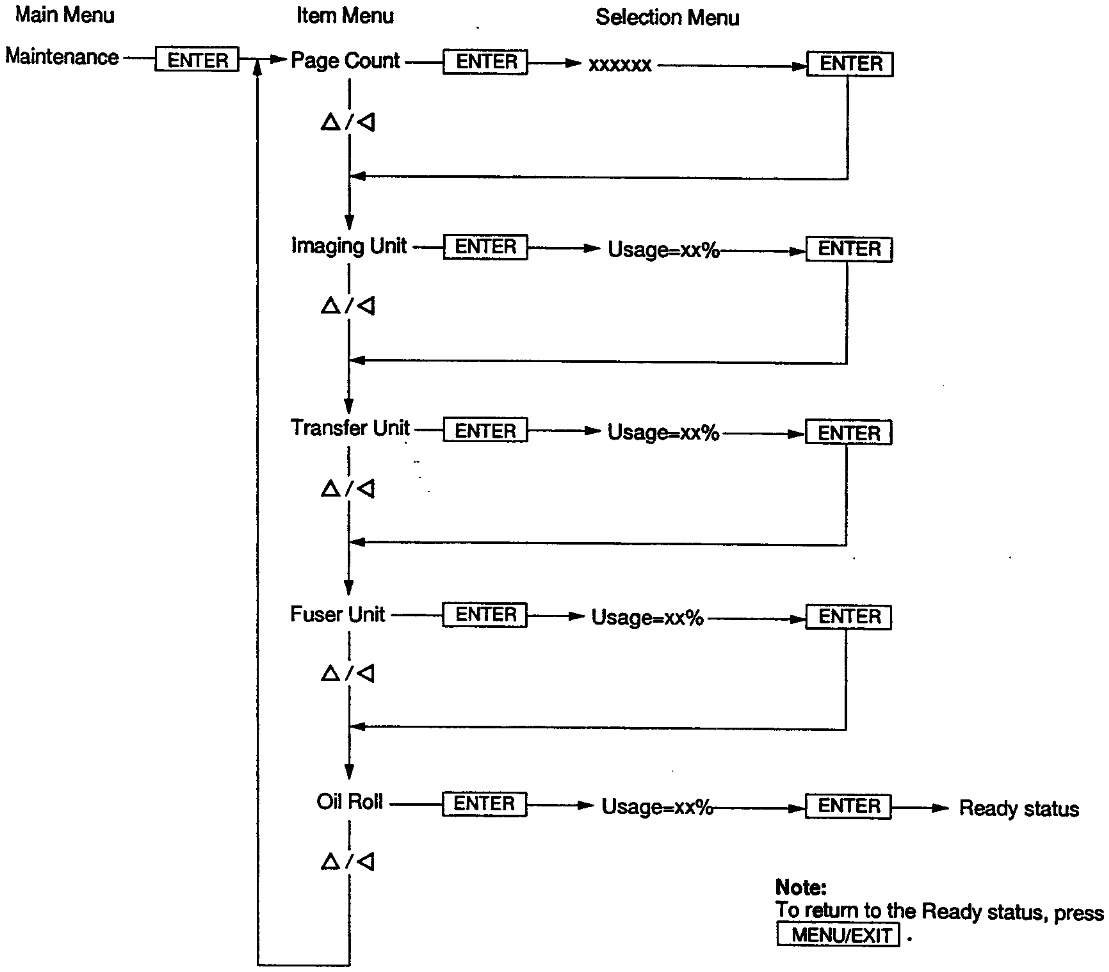
Note:
To return to the Ready status, press MENU/EXIT.

④Network item menu


Main Menu
Item Menu
Selection Menu
Netwok
ENTER
IP Address
ENTER
xxx.xxx.xxx.xxx
ENTER
△/◁
Subnet Mask
ENTER
xxx.xxx.xxx.xxx
ENTER
△/◁
Default Gateway
ENTER
xxx.xxx.xxx.xxx
ENTER
△/◁
Ready status

Note:
To return to the Ready status, press MENU/EXIT.

⑤Maintenance item menu


Main Menu
Item Menu
Selection Menu
Maintenance
ENTER
Page Count
ENTER
xxxxxx
ENTER
Δ/◁
Imaging Unit
ENTER
Usage=xx%
ENTER
Δ/◁
Transfer Unit
ENTER
Usage=xx%
ENTER
Δ/◁
Fuser Unit
ENTER
Usage=xx%
ENTER
Δ/◁
Oil Roll
ENTER
Usage=xx%
ENTER
Ready status
Δ/◁

Note:
To return to the Ready status, press MENU/EXIT .

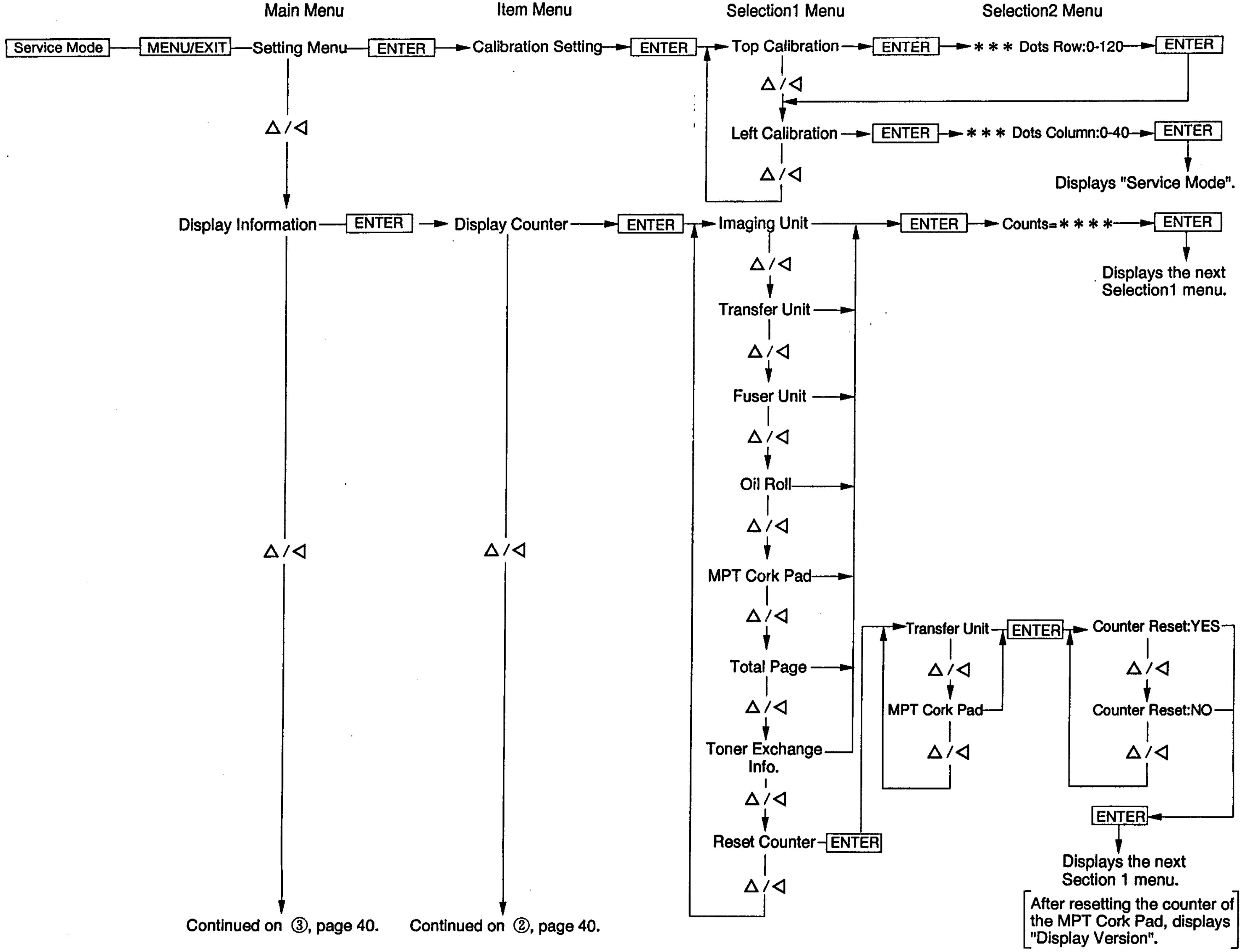
3.2 Service Mode

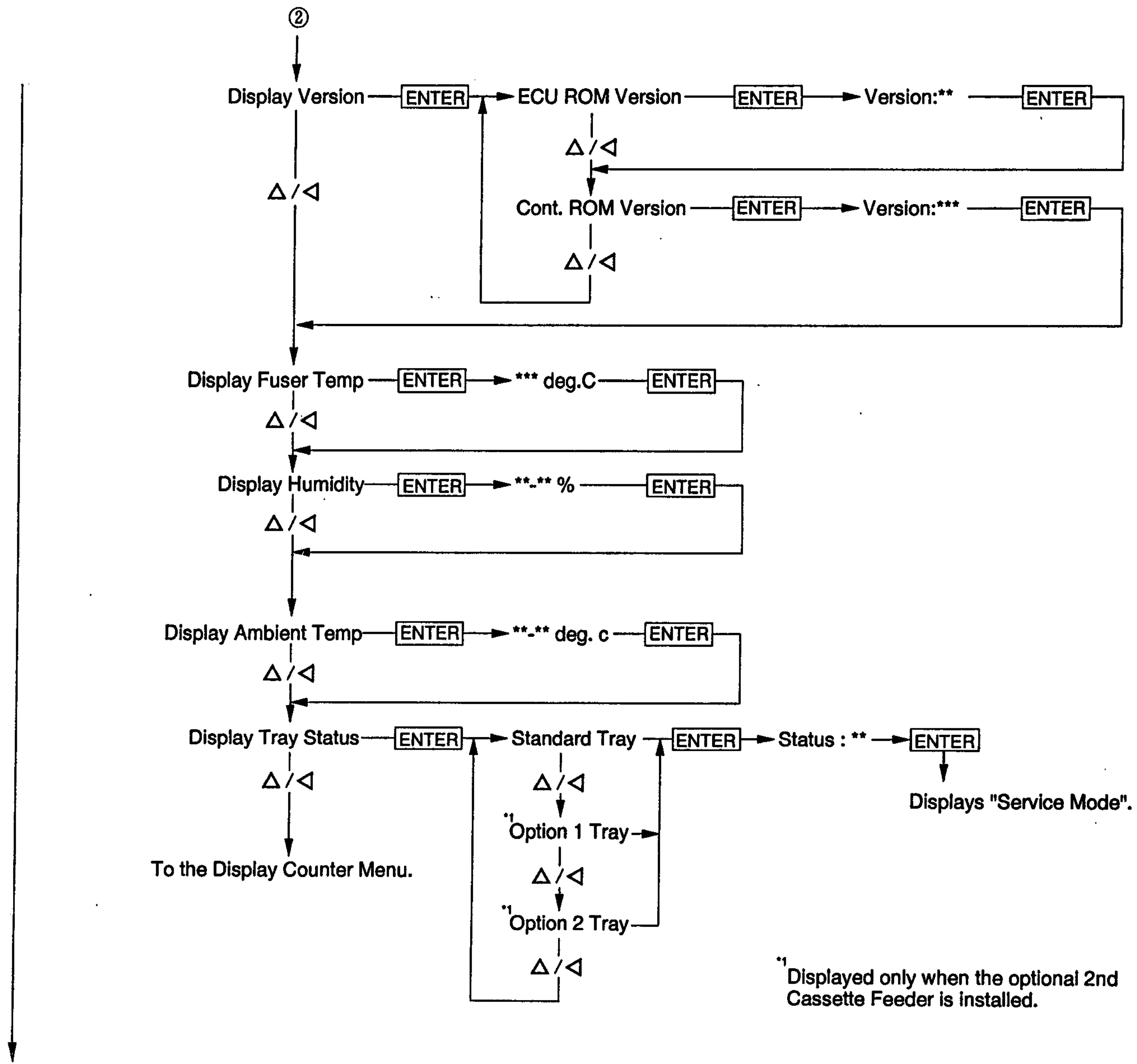
The Service Mode is entered by turning on the power while pressing the ENTER button and △ button. The service mode is accessible when the Energy Star mode is off. After warm up, "Service Mode" is displayed in the LCD. This service mode is canceled by turning off the printer.

MENU/EXIT : Press the MENU/EXIT button.
ENTER : Press the ENTER button.
△/◁ : Press the △ or ◁ button.

The printer has a two-line, 48 character LCD (2 x 24 characters). The menus in this Service Mode flowchart are displayed in the lower line.

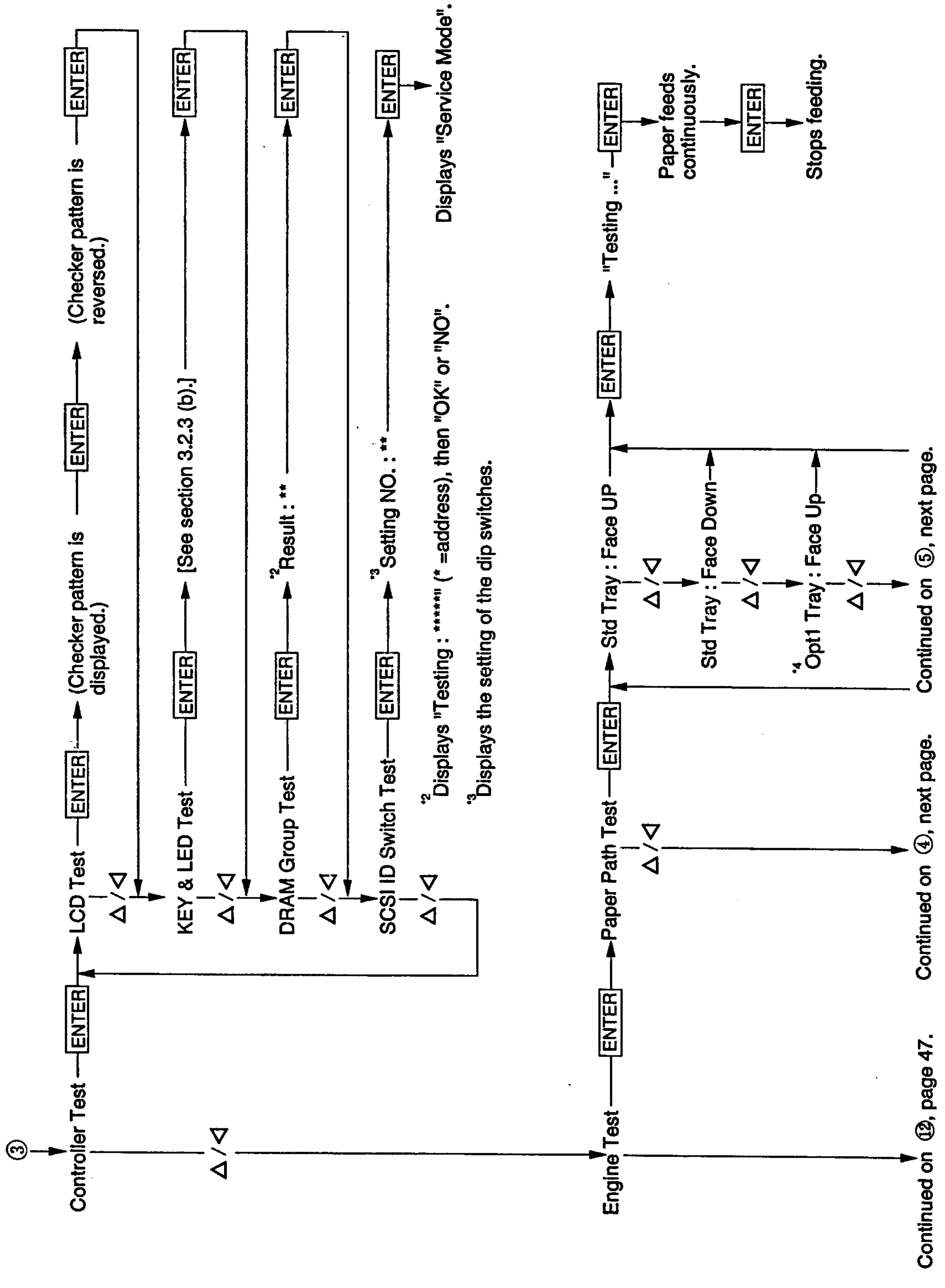
3.2.1 Service Menu


Main Menu
Item Menu
Selection1 Menu
Selection2 Menu
Service Mode
MENU/EXIT
Setting Menu
ENTER
Calibration Setting
ENTER
Top Calibration
ENTER
* * * Dots Row:0-120
ENTER
Δ / ◁
Left Calibration
ENTER
* * * Dots Column:0-40
ENTER
Displays "Service Mode".
Δ / ◁
Δ / ◁
Display Information
ENTER
Display Counter
ENTER
Imaging Unit
ENTER
Counts=* * * *
ENTER
Displays the next Selection1 menu.
Δ / ◁
Transfer Unit
Δ / ◁
Fuser Unit
Δ / ◁
Oil Roll
Δ / ◁
MPT Cork Pad
Δ / ◁
Total Page
Δ / ◁
Toner Exchange Info.
Δ / ◁
Reset Counter
ENTER
Δ / ◁
Transfer Unit
ENTER
Counter Reset:YES
Δ / ◁
MPT Cork Pad
Δ / ◁
Counter Reset:NO
Δ / ◁
ENTER
Displays the next Section 1 menu.
After resetting the counter of the MPT Cork Pad, displays "Display Version".
Δ / ◁
Δ / ◁
Continued on ③, page 40.
Continued on ②, page 40.


②
Display Version
ENTER
ECU ROM Version
ENTER
Version:**
ENTER
Δ / ◁
Cont. ROM Version
ENTER
Version:***
ENTER
Δ / ◁
Δ / ◁
Display Fuser Temp
ENTER
*** deg.C
ENTER
Δ / ◁
Display Humidity
ENTER
. %
ENTER
Δ / ◁
Display Ambient Temp
ENTER
. deg. c
ENTER
Δ / ◁
Display Tray Status
ENTER
Standard Tray
ENTER
Status : **
ENTER
Displays "Service Mode".
Δ / ◁
*1 Option 1 Tray
Δ / ◁
*1 Option 2 Tray
Δ / ◁
Δ / ◁
To the Display Counter Menu.

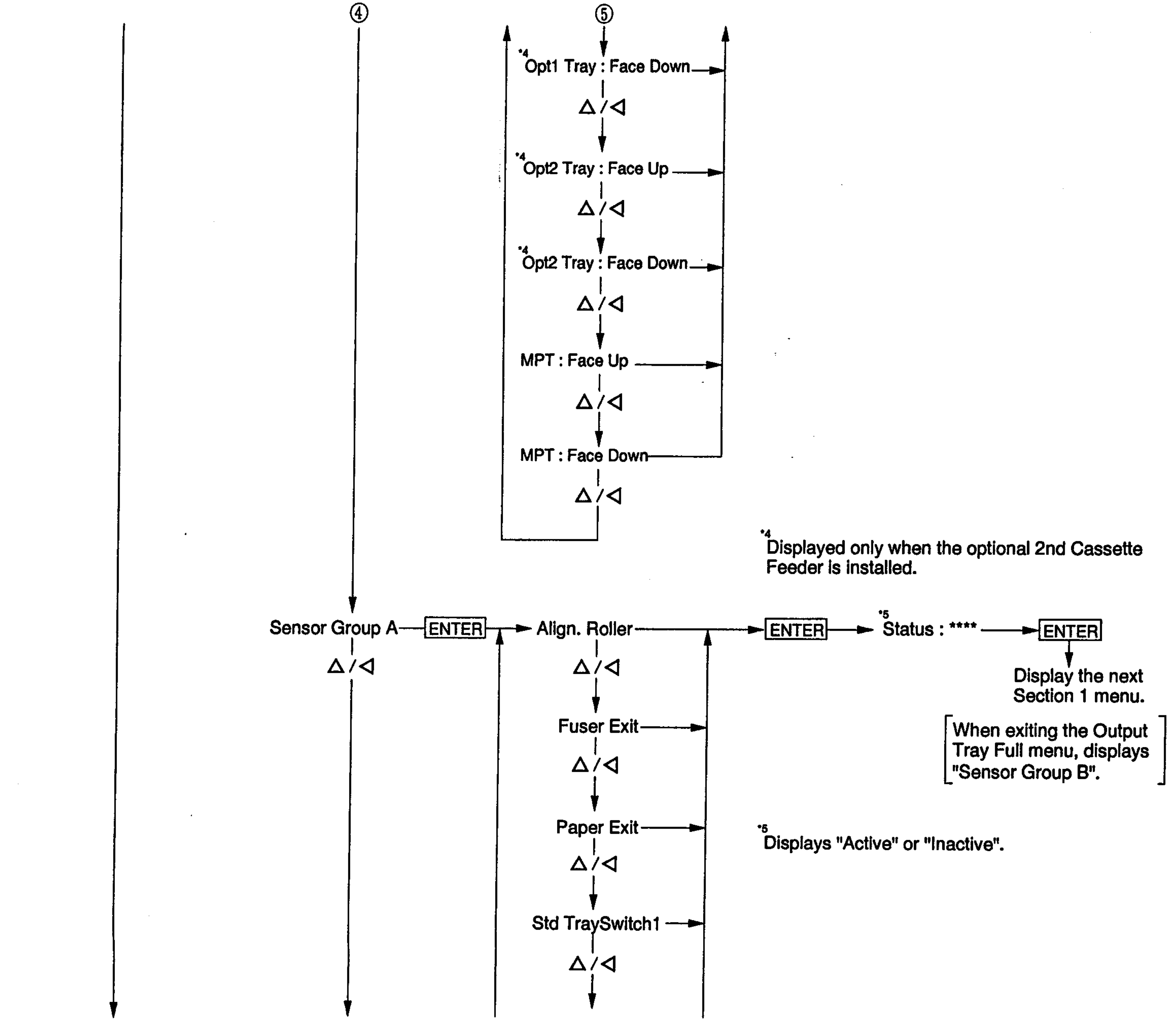
[1] Displayed only when the optional 2nd Cassette Feeder is installed.

Continued on ③, next page.


③
Controller Test
ENTER
LCD Test
ENTER
(Checker pattern is displayed.)
ENTER
(Checker pattern is reversed.)
ENTER
Δ / ∇
KEY & LED Test
ENTER
[See section 3.2.3 (b).]
ENTER
Δ / ∇
DRAM Group Test
ENTER
*2Result : **
ENTER
Δ / ∇
SCSI ID Switch Test
ENTER
*3Setting NO. : **
ENTER
Displays "Service Mode".
Δ / ∇
Δ / ∇
Engine Test
ENTER
Paper Path Test
ENTER
Std Tray : Face UP
ENTER
"Testing ..."
ENTER
Paper feeds continuously.
ENTER
Stops feeding.
Δ / ∇
Std Tray : Face Down
Δ / ∇
*4Opt1 Tray : Face Up
Δ / ∇
Δ / ∇
Continued on ⑫, page 47.
Continued on ④, next page.
Continued on ⑤, next page.

[2] Displays "Testing : *****" (* =address), then "OK" or "NO".

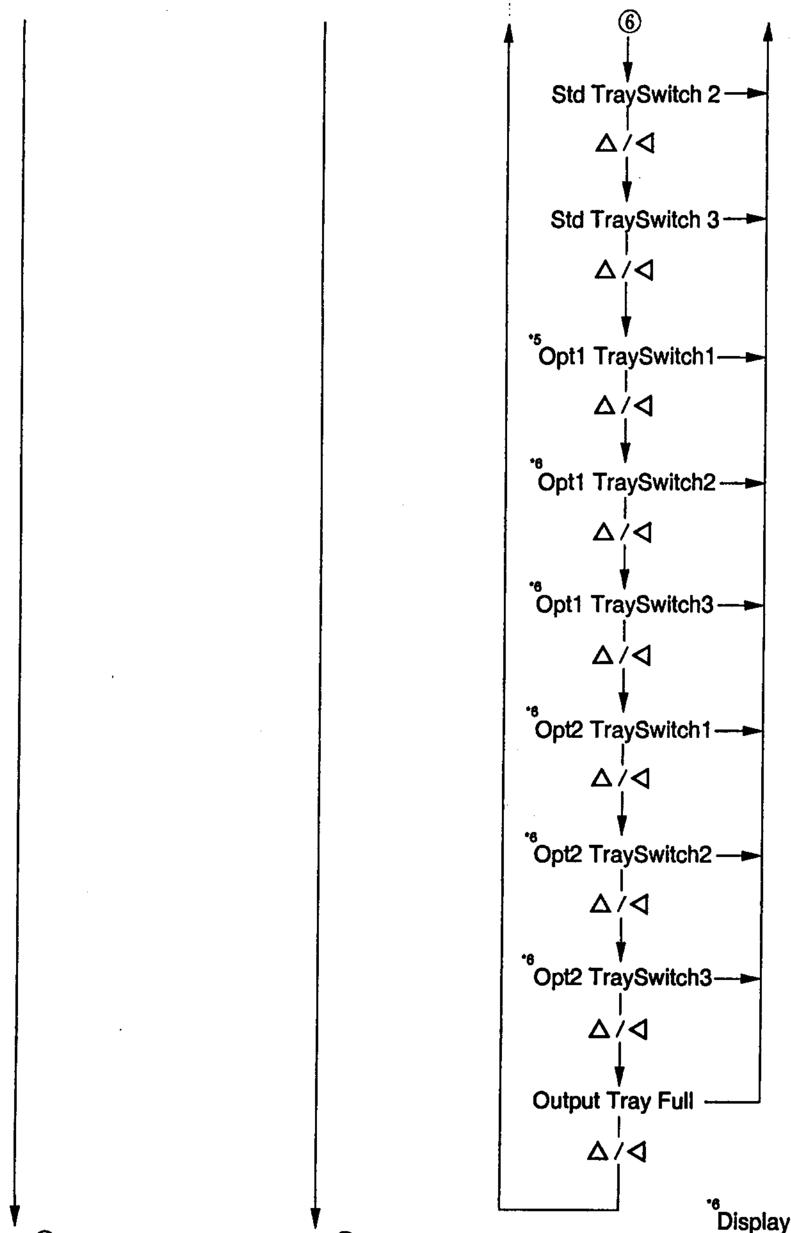
[3] Displays the setting of the dip switches.


⑤
*4 Opt1 Tray : Face Down
△/◁
*4 Opt2 Tray : Face Up
△/◁
*4 Opt2 Tray : Face Down
△/◁
MPT : Face Up
△/◁
MPT : Face Down
△/◁
④
Sensor Group A
△/◁
ENTER
Align. Roller
△/◁
Fuser Exit
△/◁
Paper Exit
△/◁
Std TraySwitch1
△/◁
ENTER
*5 Status : ****
ENTER
Display the next Section 1 menu.
[When exiting the Output Tray Full menu, displays "Sensor Group B".]

[4] Displayed only when the optional 2nd Cassette Feeder is installed.

[5] Displays "Active" or "Inactive".

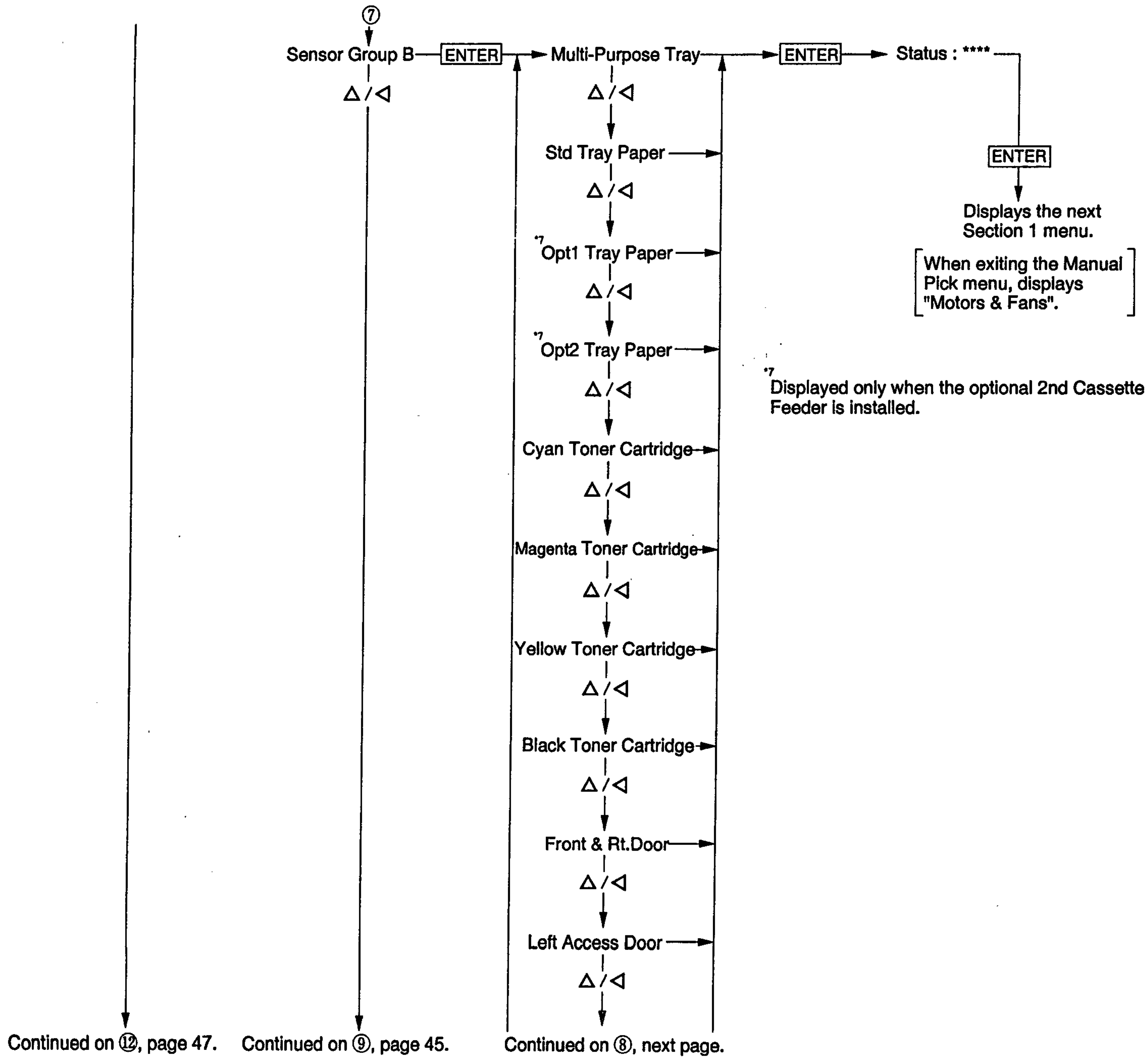
Continued on ⑫, page 47.
Continued on ⑦, page 43.
Continued on ⑥, next page.


⑥
Std TraySwitch 2
△/◁
Std TraySwitch 3
△/◁
*5 Opt1 TraySwitch1
△/◁
*6 Opt1 TraySwitch2
△/◁
*6 Opt1 TraySwitch3
△/◁
*6 Opt2 TraySwitch1
△/◁
*6 Opt2 TraySwitch2
△/◁
*6 Opt2 TraySwitch3
△/◁
Output Tray Full
△/◁

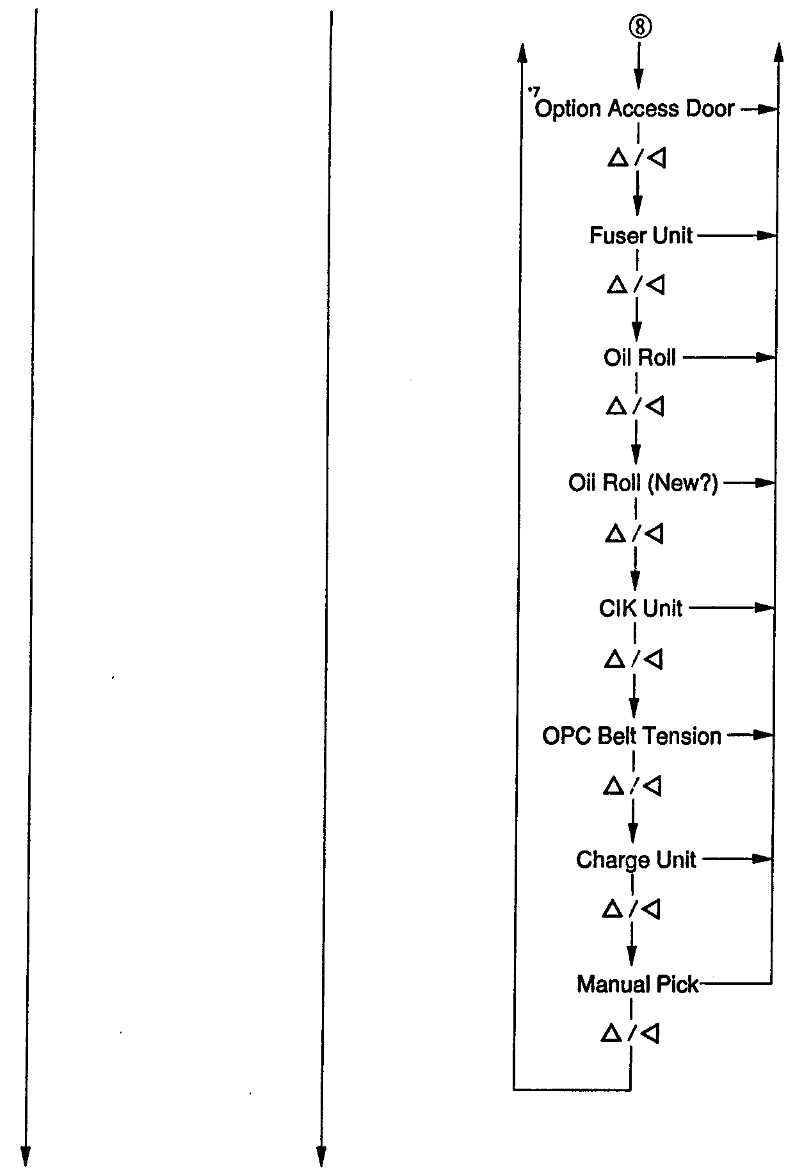
Continued on ⑫, page 47.

Continued on ⑦, next page.

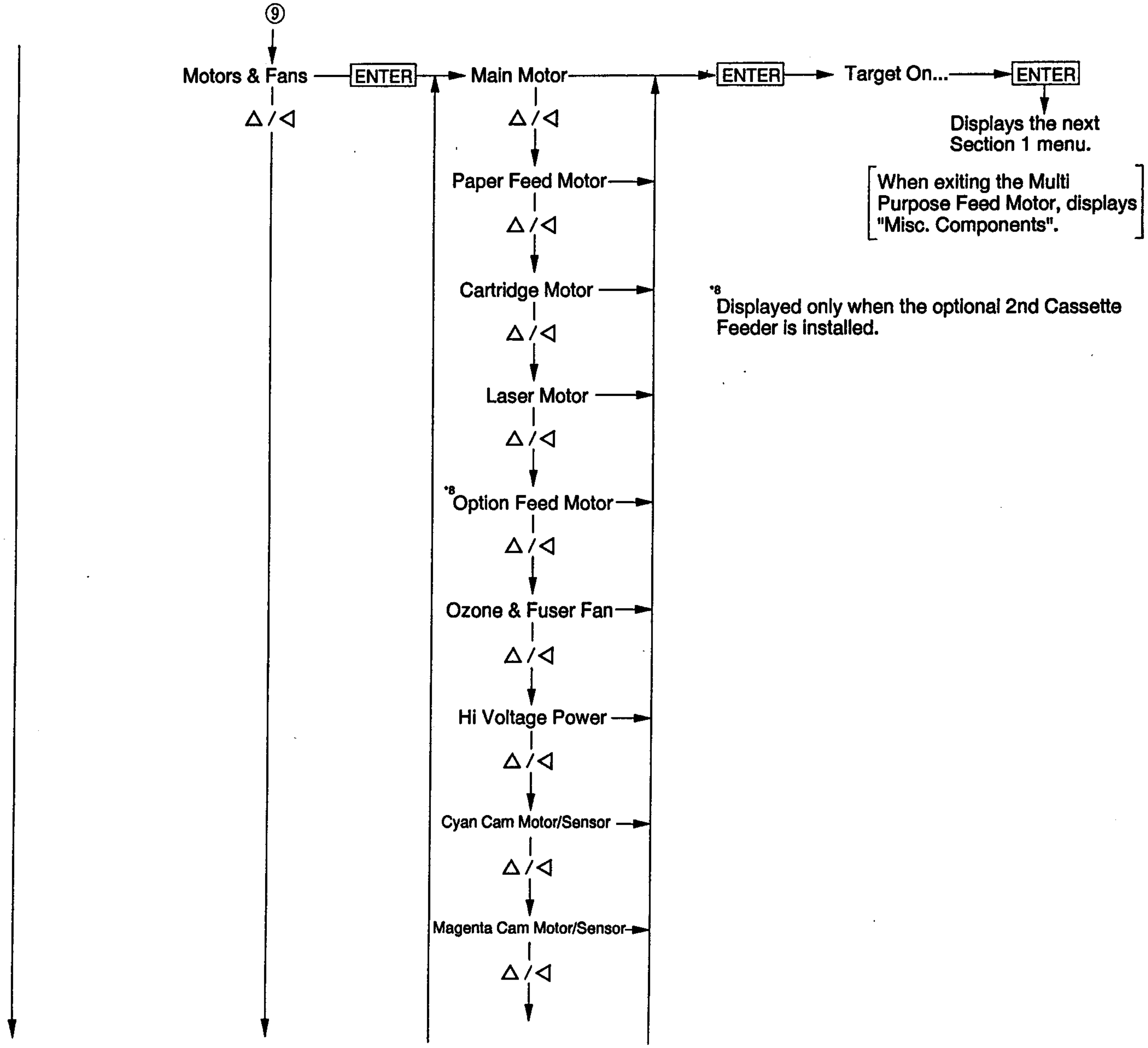
[*6] Displayed only when the optional 2nd Cassette Feeder is installed.


⑦
Sensor Group B
ENTER
Multi-Purpose Tray
ENTER
Status : ****
ENTER
Displays the next Section 1 menu.
[When exiting the Manual Pick menu, displays "Motors & Fans".]
△/▽
Std Tray Paper
△/▽
*7 Opt1 Tray Paper
△/▽
*7 Opt2 Tray Paper
△/▽
Cyan Toner Cartridge
△/▽
Magenta Toner Cartridge
△/▽
Yellow Toner Cartridge
△/▽
Black Toner Cartridge
△/▽
Front & Rt.Door
△/▽
Left Access Door
△/▽
Continued on ⑫, page 47.
Continued on ⑨, page 45.
Continued on ⑧, next page.

[*7] Displayed only when the optional 2nd Cassette Feeder is installed.


⑧
*7 Option Access Door
△/◁
Fuser Unit
△/◁
Oil Roll
△/◁
Oil Roll (New?)
△/◁
CIK Unit
△/◁
OPC Belt Tension
△/◁
Charge Unit
△/◁
Manual Pick
△/◁

Continued on ⑫, page 47.   Continued on ⑨, next page.

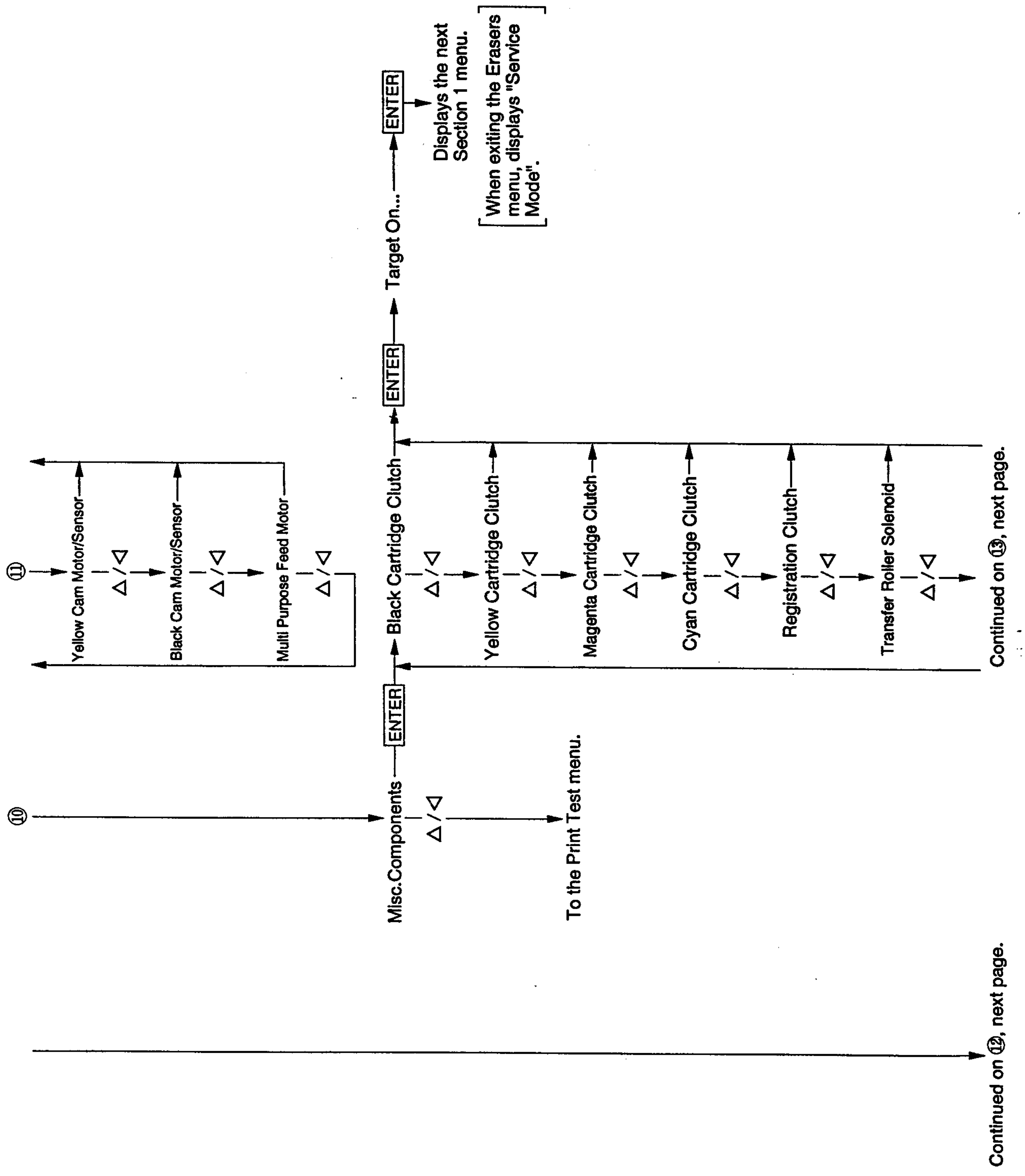

⑨
Motors & Fans
△/▽
ENTER
Main Motor
△/▽
Paper Feed Motor
△/▽
Cartridge Motor
△/▽
Laser Motor
△/▽
*8Option Feed Motor
△/▽
Ozone & Fuser Fan
△/▽
Hi Voltage Power
△/▽
Cyan Cam Motor/Sensor
△/▽
Magenta Cam Motor/Sensor
△/▽
ENTER
Target On...
ENTER
Displays the next Section 1 menu.
When exiting the Multi Purpose Feed Motor, displays "Misc. Components".

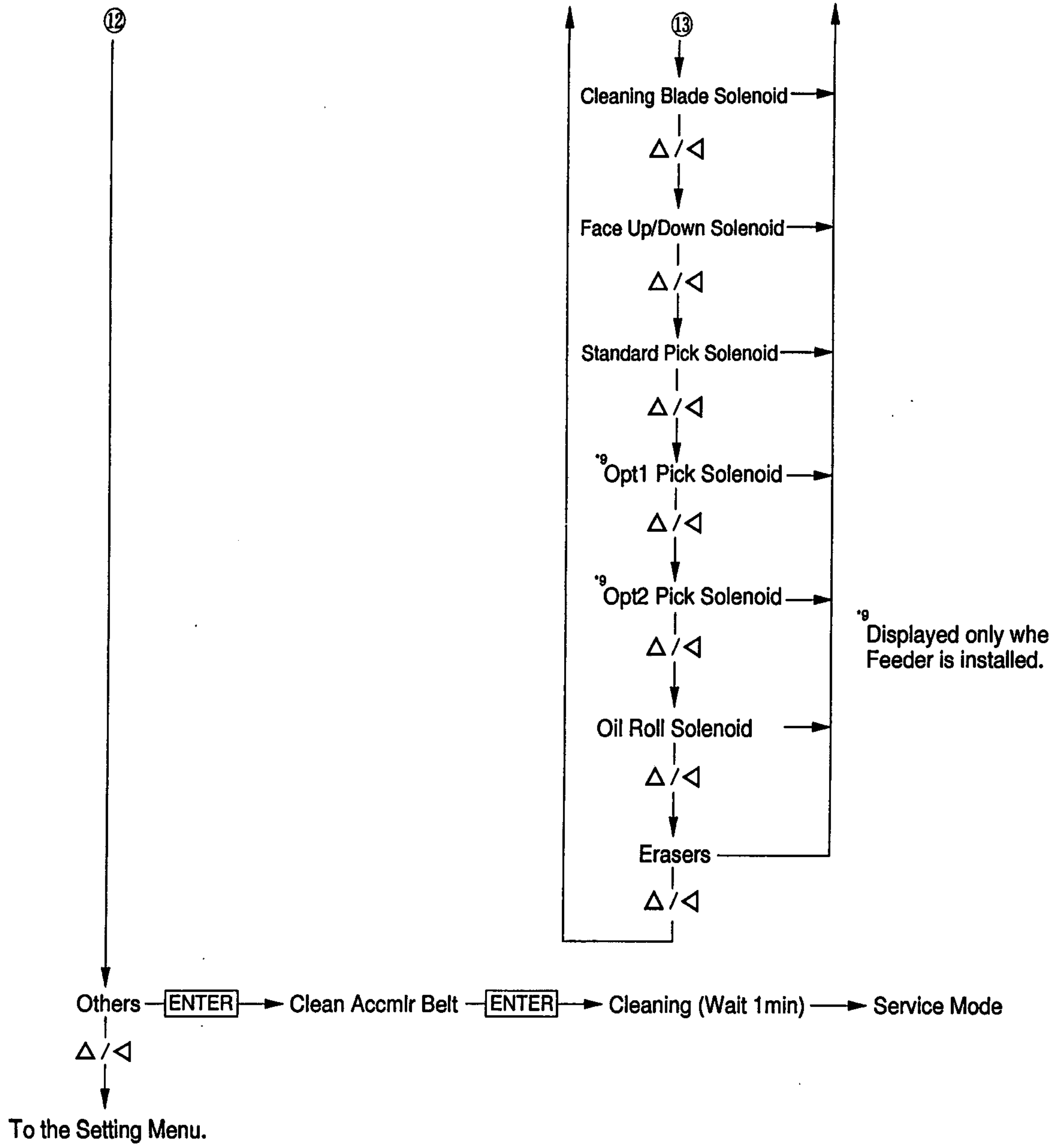
[*8] Displayed only when the optional 2nd Cassette Feeder is installed.

Continued on ⑫, page 47.

Continued on ⑩, next page.

Continued on ⑪, next page.


⑩
Misc.Components
△/▽
To the Print Test menu.
ENTER
⑪
Yellow Cam Motor/Sensor
△/▽
Black Cam Motor/Sensor
△/▽
Multi Purpose Feed Motor
△/▽
Black Cartridge Clutch
△/▽
Yellow Cartridge Clutch
△/▽
Magenta Cartridge Clutch
△/▽
Cyan Cartridge Clutch
△/▽
Registration Clutch
△/▽
Transfer Roller Solenoid
△/▽
Continued on ⑬, next page.
ENTER
Target On...
ENTER
Displays the next Section 1 menu.
When exiting the Erasers menu, displays "Service Mode".
Continued on ⑫, next page.


⑫
⑬
Cleaning Blade Solenoid
△/◁
Face Up/Down Solenoid
△/◁
Standard Pick Solenoid
△/◁
*9 Opt1 Pick Solenoid
△/◁
*9 Opt2 Pick Solenoid
△/◁
Oil Roll Solenoid
△/◁
Erasers
△/◁
Others
ENTER
Clean Accmlr Belt
ENTER
Cleaning (Wait 1min)
Service Mode
△/◁
To the Setting Menu.

*9 Displayed only when the optional 2nd Cassette Feeder is installed.

3.2.2 Calibration

Calibration mode is used to adjust print position, primarily when the laser unit or engine board is replaced. (See section 7.1.)

(a) Top Calibration
Select "Top Calibration" and press the ENTER button. Use △ or ◁ button to change the data. This setting moves the print area in "dot row" increments of 1 dot row. Increments of 0~120 dot rows are acceptable.

(b) Left Calibration
Select "Left Calibration" and press the ENTER button. Use △ or ◁ button to change the data. This setting moves the print area to the right (away from the left margin) in "dot column" increments of 1 dot column. Increments of 0~40 dot columns are acceptable.

3.2.3 Display Information

(a) Display Counter

Section menu	Description
Imaging Unit	A count of the total number of images fed since the Imaging Unit was last replaced.
Transfer Unit	A count of the total number of pages fed since the Transfer Unit was last replaced.
Fuser Unit	A count of the total number of pages fed since the Fuser Unit was last replaced.
Oil Roll	A count of the total number of pages fed since the Oil Supply Roll was last replaced.
MPT Cork Pad	A count of the total number of pages fed manually.
Total Page	A count of the total number of pages fed since the product is shipped.

(b) Display Version

Section menu	Description
ECU ROM Version	Engine ROM Version (in decimal numeration).
Cont. ROM Version	Controller ROM Version.

(c) Display Fuser Temp
This menu displays the Fuser Unit temperature.

(d) Display Humidity
This menu displays the humidity.

e) Display Ambient Temp

This menu displays the ambient temperature.

(f) Display Tray Status

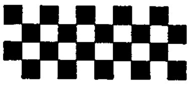
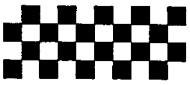
This menu displays the paper size loaded in the cassettes. When a cassette is not installed, "No Tray" is displayed.

Section menu	Description
Standard Tray	Media tray
Opt 1 Tray	Upper cassette inserted in the optional 2nd Cassette Feeder.
Opt 2 Tray	Lower cassette inserted in the optional 2nd Cassette Feeder.

3.2.4 Controller Test

(a) LCD Test

This menu is used to check the LCD. Select "LCD Test" and press the ENTER button. Confirm that the LCD messages/patterns shown in the following table are displayed.

Step No.	Button	LCD Message / Pattern
1	ENTER	LCD Test
2	ENTER	
3	ENTER	

(b) KEY & LED Test

This menu is used to check the key and LED operations. Select "KEY & LED Test" and use the following procedure to confirm key and LED operation.

Step No.	Button	LED		LCD Message
		ERROR	READY	
1	ENTER	OFF	OFF	Controller Test KEY & LED Test
2	MENU/EXIT	ON	OFF	Red=ON & Green=OFF Push Menu Key
3	◁/CANCEL	OFF	ON	Red=OFF & Green=ON Push Cancel Key
4	△/CONTINUE	OFF	OFF	Red=OFF & Green=OFF Push Continue Key
5	ENTER	ON	ON	Red=ON & Green=ON Push Enter Key

(c) DRAM Group Test
Used to check the memory.

(d) SCSI ID Switch Test
Shows the current dip switch settings in decimal numeration.

3.2.5 Engine Test Menu

(a) Paper Path Test
Used to execute paper path test.

(b) Sensor Group A / B
Used to check sensor movement.

(c) Motors and Fans
Used to check motors and fans.

(d) Miscellaneous Components
Used to check clutches and solenoids.

3.2.6 Other Menu

(a) Clean Accumulator Belt
Used to clean the accumulator.

4. Mechanical Function

4.1 Drive Mechanism/Image Process General Description

Drive Mechanism

Eight DC servomotors are used to transmit drive to each mechanical block within the engine. The main motor transmits drive to the imaging unit. The paper feed motor transmits drive to the paper feed unit, fuser unit and toner cartridge selector/paper eject unit. The toner cartridge motor transmits drive to the toner cartridges. Four cam motors in the toner cartridge selector/paper eject unit move the toner cartridge to their development position.
The paper feed unit, laser scanning unit, toner cartridges, fuser unit and toner cartridge selector/paper eject unit are designed for easy removal from the printer for easy maintenance.

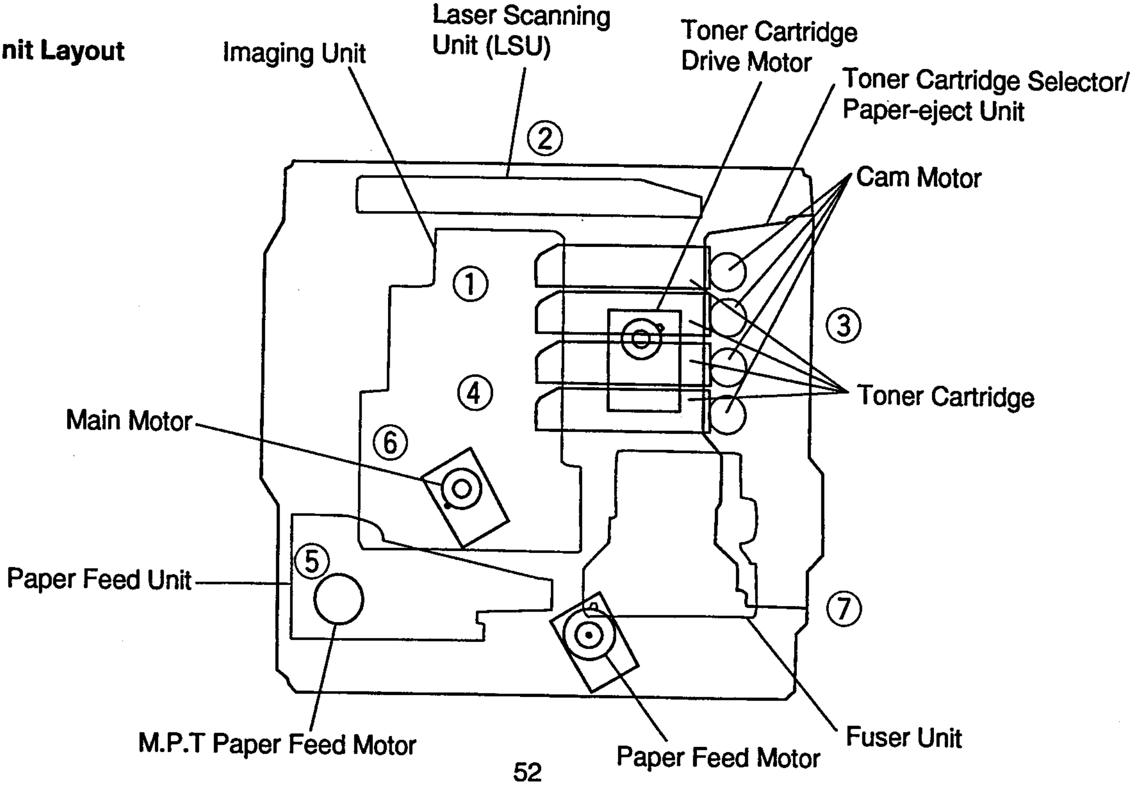
Print Process

The laser printer creates an image on paper using a technique called laser electrophotography. The printer uses the electrographic process known as Discharged Area Development, or "write black". In this process, a digitally modulated laser scans laterally across a rotating OPC belt that has been negatively charged. Wherever the belt is exposed by the laser beam, the image is written and toner is transferred.

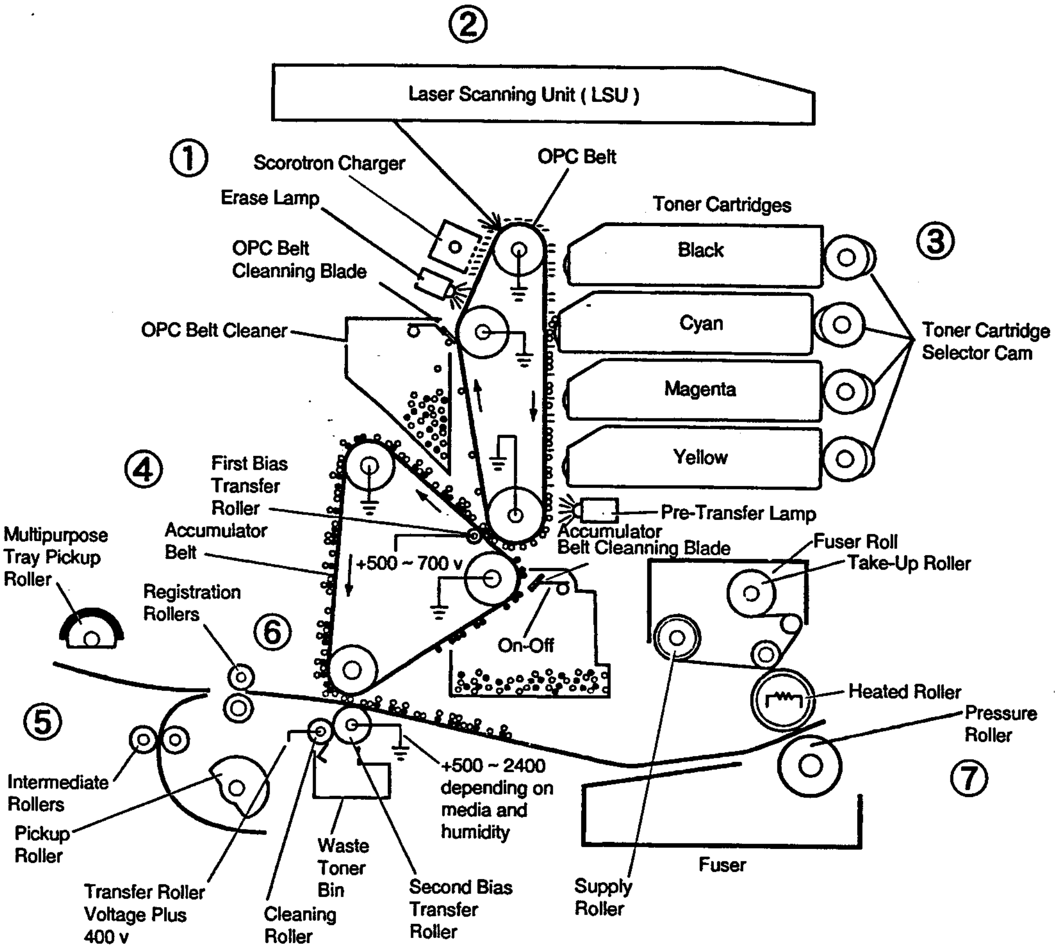
To generate a color image, the OPC belt must complete four rotations, one for each primary color and black. During each successive pass, the laser exposes the portions of belt that correspond to the primary color's component of the image. Toner is attracted to the laser-exposed portions of the belt.
As each color layer is developed on the OPC belt, they are transferred to the accumulator belt until all four color layers eventually reside one on top of the other on the accumulator belt. At this point, a sheet of paper is advanced under the accumulator belt and the toner is transferred to the sheet of paper. The paper advances to the fuser, where heat and pressure permanently bond the toner to the paper. From the fuser, the paper is driven to the output tray.

A cleaning blade scrapes residual toner from the OPC belt before the next primary color toner is applied to the belt. This prevents contamination of the next color layer. The cleaning blade is in constant contact with the belt. An accumulator belt cleaner scapes residual toner from the accumulator belt. This prevents "ghosting" of the next print. The blade only comes in contact with the belt after the accumulated toner layers are transferred to the sheet of paper.

Drive Unit Layout



Print Process


②
Laser Scanning Unit (LSU)
①
Scorotron Charger
OPC Belt
Erase Lamp
Toner Cartridges
OPC Belt
Cleanning Blade
Black
③
OPC Belt Cleaner
Cyan
Toner Cartridge
Selector Cam
Magenta
Yellow
④
First Bias
Transfer
Roller
Pre-Transfer Lamp
Multipurpose
Tray Pickup
Roller
Accumulator
Belt
Accumulator
Belt Cleanning Blade
Fuser Roll
Take-Up Roller
+500 ~ 700 v
Registration
Rollers
⑥
On-Off
Heated Roller
Pressure
Roller
⑤
+500 ~ 2400
depending on
media and
humidity
⑦
Intermediate
Rollers
Pickup
Roller
Waste
Toner
Bin
Fuser
Transfer Roller
Voltage Plus
400 v
Cleaning
Roller
Second Bias
Transfer
Roller
Supply
Roller

Each block is explained in the following sections.

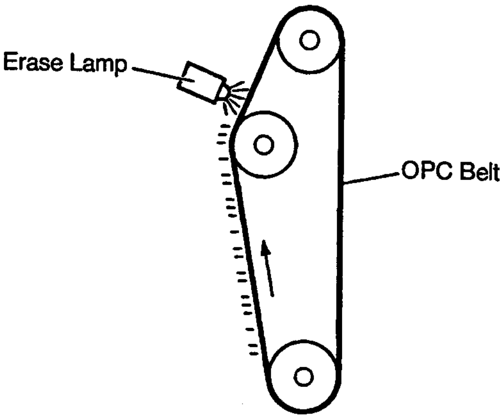
① 4.2.1 Discharge and Charging
② 4.2.2 Laser Exposure and Scanning
③ 4.2.3 Developing
④ 4.2.4 Toner Transfer to the Accumulator Belt
⑤ 4.2.5 Paper Pickup
⑥ 4.2.6 Toner Transfer to Paper
⑦ 4.2.7 Fusing and Exiting

4.2 Print Process

4.2.1 Discharging and Charging

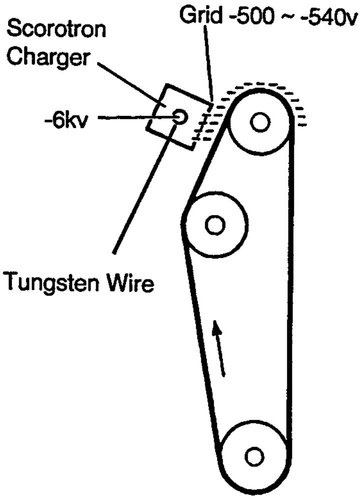
Discharge

The print process begins when the OPC belt passes by the erase lamp. The belt is rotating at 96 mm-per-second for 600 dpi printing or 48 mm-per-second for 1200 dpi printing. The light of the erase lamp, which is a horizontal row of red LEDs, removes random negative charges from the OPC belt. Before pre-exposure, the surface of the belt varies from -500 volts to +50 volts. After pre-exposure, the surface of the belts is 0 to -20 volts. The erase lamp is called the erase lamp since it "erases" negative charges from the belt.



Charge

The electrostatic potential of the belt is not uniform following discharging. As the belt rotates, it passes a scorotron charger, which bombards the belt with negative charges. The scorotron charger behaves somewhat like a vacuum tube. The grid of the charger, held at a potential of between -450 volts to -600 volts and coupled with the varying voltage potential on any discrete point on the belt's surface, determines how many electrons can flow from the corona wire onto that point of the belt's surface. The corona wire is charged to -6 kilovolts with a constant current of 400μA. The varying electron output from the scorotron, directly based on the varying charge of the belt surface, ensures a uniform negative potential of -440 volts or -590 volts on the belt surface, depending on the selected dot-per-inch printing and ambient temperature.

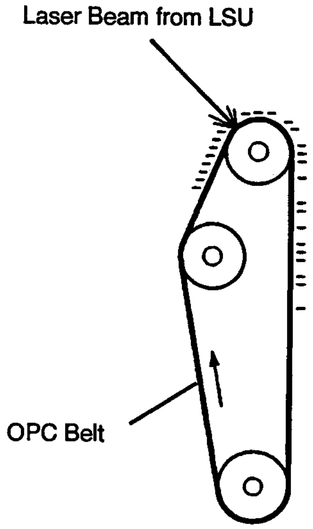


4.2.2 Laser Exposure and Scanning

Laser Exposure

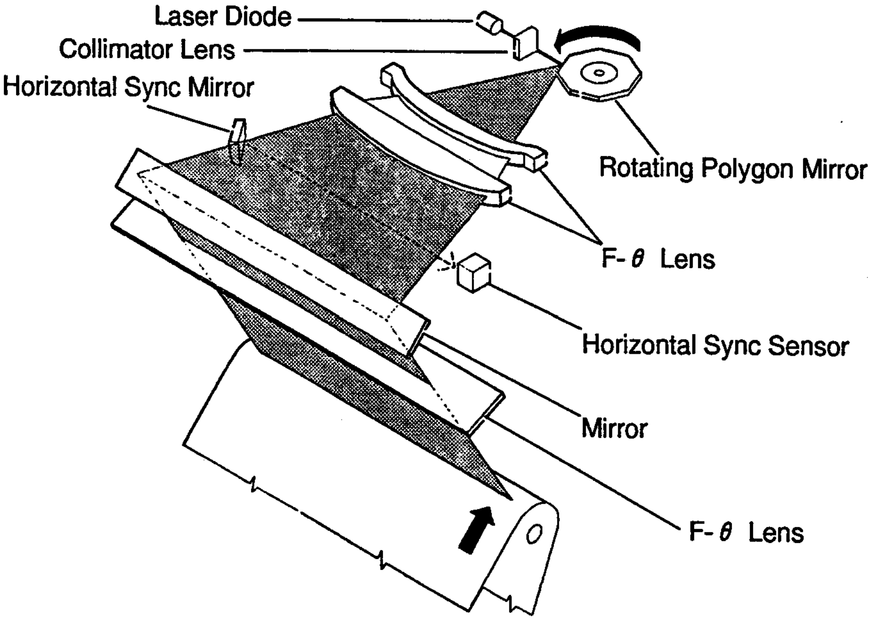
As the OPC belt rotates, the uniformly charged belt is exposed by the modulated laser beam. The vertically-moving belt passes in front of the horizontally scanning laser beam, and negative charges on the belt surface are neutralized by the beam. This forms a latent image.

Laser output power is either 4 mW or 5 mW, depending on whether the printer is printing in 1200 dots per inch (dpi) mode or 600 dpi mode. Following laser exposure, the negative potential on the belt varies from -440 volts or -590 volts (unexposed) to -10 or -20 volts (fully exposed).



Laser Scanning

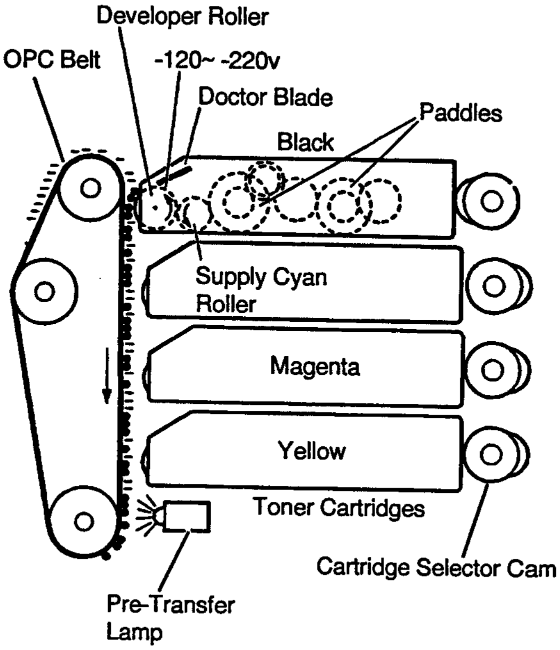
A laser diode generates the laser beam, and lenses and mirrors in the laser scanner direct the beam at the photoconductive belt. The beam is made parallel by the collimator lens and is directed at the rotating polygonal mirror. The mirror rotates at a constant 23,000 revolutions per minute. This transforms the beam into a horizontally scanning beam, which is directed through the f-θ primary lens, altering the beam's angular rotation motion into a constant horizontal motion. The toric correction lens corrects the beam for any vertical misregistration. Next, the beam reflects off of a mirror and passes through a window where it scans across the rotating photoconductive belt. At the beginning of each horizontal sweep, the horizontal sync mirror deflects the laser beam to the horizontal sync sensor. This informs the engine control board that the laser beam is beginning its horizontal sweep and that it can begin to modulate the signal with the data to be printed on that line of the image.



4.2.3 Developing

Developing

As the OPC belt continues to rotate, it passes by the four toner cartridges. Each cartridge is selectively cam-driven forward to bring its developer roller into direct contact with the belt at the appropriate time.
The currently activated toner cartridge's developer roller is charged to a potential between -120 to -220 volts. Toner is attracted to the exposed portions of the belt in reverse proportion to the negative charge. The greatest amount of toner is transferred to the most positive potential. The developer roller rotates at 1.6 (600 dpi printing) or 2.13 (1200 dpi printing) times the speed of the OPC belt to ensure a constant supply of toner.
As the belt advances, it passes the pre-transfer lamp, which, like the discharge lamp, removes remaining negative charges from the unexposed portions of the belt.

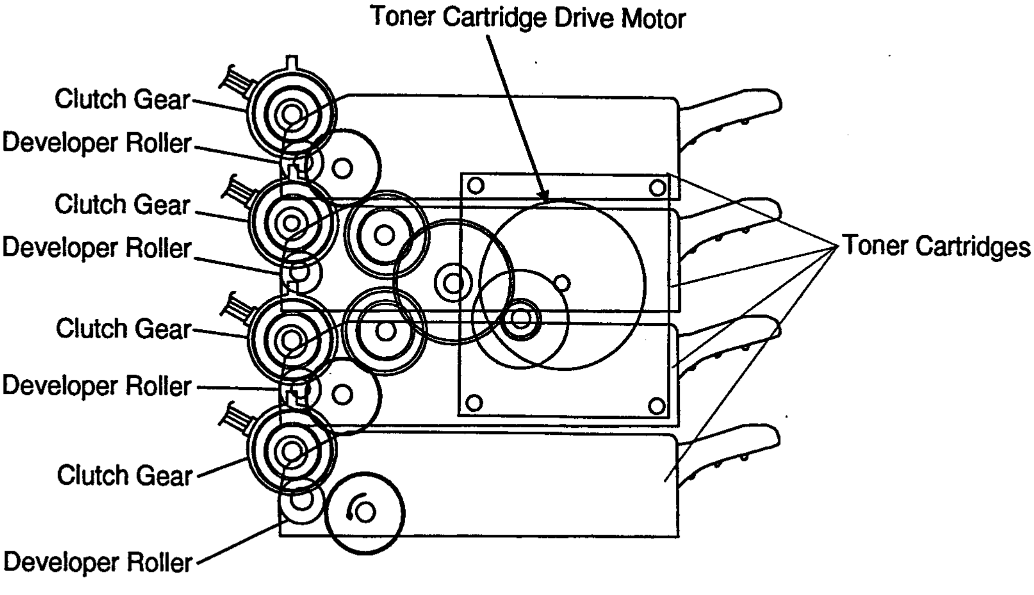

Developer Roller
OPC Belt
-120~ -220v
Doctor Blade
Paddles
Black
Supply Cyan
Roller
Magenta
Yellow
Toner Cartridges
Cartridge Selector Cam
Pre-Transfer
Lamp

Inside each toner cartridge is a toner supply roller that rotates in the opposite direction from the developer roller. This supplies a layer of toner onto the developer roller. The doctor blade smooths and evenly distributes the toner on the developer roller. Gear-driven paddles churn the toner and keep it fluidized and moving towards the developer roller.

Toner Cartridge Drive

Drive is supplied from the toner cartridge drive motor. At the proper time, the clutch corresponding with the currently selected toner cartridge is activated by a signal from the CPU, transmitting drive to the clutch gear via idle gears. Drive is then transmitted to the developer rollers.

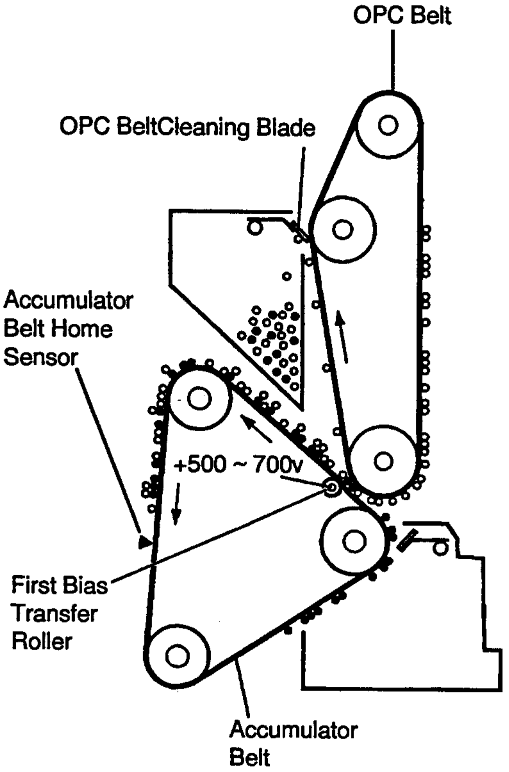
The toner level sensing receiver board detects whether each of the four toner cartridges contains sufficient toner. This board is paired with the toner level sensing transmitter board and functions as the photo sensors.


Toner Cartridge Drive Motor
Clutch Gear
Developer Roller
Clutch Gear
Developer Roller
Clutch Gear
Developer Roller
Clutch Gear
Developer Roller
Toner Cartridges

4.2.4 Toner Transfer to the Accumulator Belt

As the OPC belt rotates, it comes in contact with the accumulator belt, which is rotating at the same speed. Located under the accumulator belt at the contact point with the OPC belt, the first bias transfer roller carries a charge that varies between +500 and +700 volts (based on the sensed temperature, humidity and print speed). This strong potential attracts and holds the toner from the OPC belt to the accumulator belt. The accumulator belt makes four complete rotations, one for each of the four toner layers. The accumulator belt home-position sensor sync signal, generated from a timing mark on the accumulator belt, informs the engine control board when to begin exposing the OPC belt with information to build the next toner layer. At that time, the accumulator belt is rotated to the proper position to transfer the toner layer in proper registration with the previous layer(s).

Any toner remaining on the OPC belt after the transfer to the accumulator belt is scraped off by the OPC belt cleaning blade, which is always in contact with the belt. This leaves the OPC belt clean for the next layer of toner to be transferred from the toner cartridges.

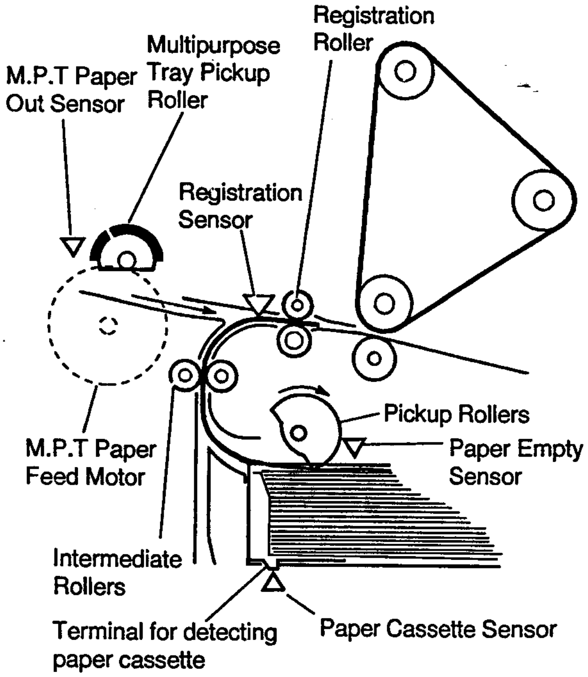

OPC Belt
OPC BeltCleaning Blade
Accumulator Belt Home Sensor
+500 ~ 700v
First Bias Transfer Roller
Accumulator Belt

4.2.5 Paper Pickup

The cam-shaped pickup rollers are driven by the paper-feed motor and force a sheet of paper between the intermediate rollers. The pickup roller completes only one rotation to pick a sheet of media. This will push the sheet of paper to the intermediate rollers but does not pick a second sheet. Alternately, depending on the user's selection, media may be picked from the multi-purpose tray. The multi-purpose tray pickup roller is driven by the M.P.T paper feed motor and feeds a sheet of media or an envelope into the registration rollers.

The intermediate rollers advance the sheet of paper to the registartion rollers. The paper is driven lightly against the stationary registration rollers to create a slight buckle in the paper, aligning the sheet of paper. At this point, the paper remains stationary (since the registration roller's clutch is not yet energized) until the image is ready to be printed on the paper. The registration sensor detects whether the sheet of paper arrived at the aligning rollers after being properly picked and traveling through the intermediate rollers.

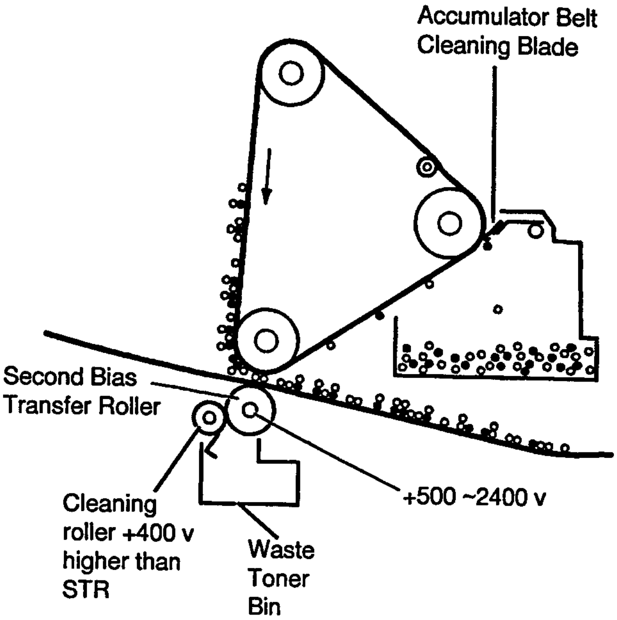
The paper feed unit has the M.P.T paper out sensor, paper empty sensor and paper cassette sensor. The M.P.T paper out sensor detects whether the paper is set on the manual feed tray. The paper empty sensor detects whether the paper is set in the paper cassette.The paper cassette sensor detects paper cassette presence and paper size.


Registration Roller
Multipurpose Tray Pickup Roller
M.P.T Paper Out Sensor
Registration Sensor
Pickup Rollers
Paper Empty Sensor
M.P.T Paper Feed Motor
Intermediate Rollers
Terminal for detecting paper cassette
Paper Cassette Sensor

4.2.6 Toner Transfer to Paper

Once all four layers of toner reside up on the accumulator belt, the registration roller clutch is energized to advance a sheet of paper (which has already been picked) to the second bias transfer roller. The toner image on the rotating accumulator and the paper that is being fed into the image unit are synchronized for proper alignment. The leading edge of the toner image on the accumulator belt is aligned 5 mm from the leading edge of the paper. A strong positive voltage in the second bias transfer roller attracts the toner from the accumulator belt to the paper. The transfer roller voltage varies from +500 to +2400 volts based on the ambient temperature, humidity, print speed and media being printed upon. The paper (or transparency film) advances at the same speed as the accumulator belt.

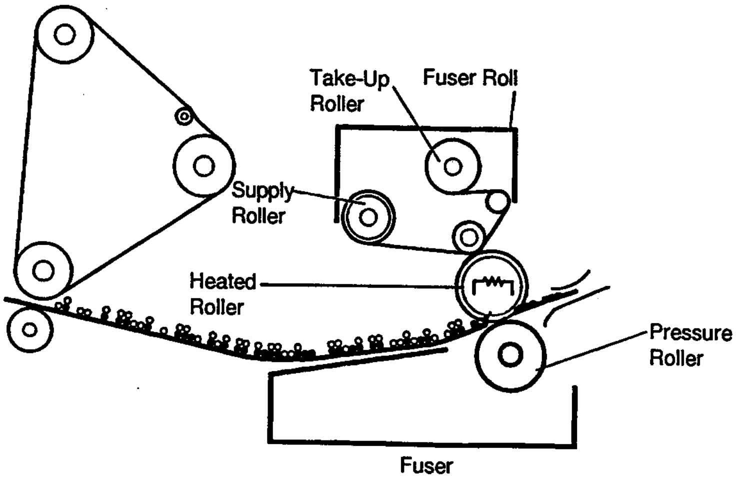
As the toner is being transferred to the paper, the accumulator belt cleaning blade is activated. This blade scrapes any remaining traces of toner from the accumulator belt prior to the next image transfer. Residual toner is removed from the second bias transfer roller by a cleaning roller that is held at a potential that is +400v higher than the second bias transfer roller. A blade scrapes the toner off the cleaning roller into the toner waste bin.


Accumulator Belt Cleaning Blade
Second Bias Transfer Roller
Cleaning roller +400 v higher than STR
Waste Toner Bin
+500 ~2400 v

4.2.7 Fusing and Exiting

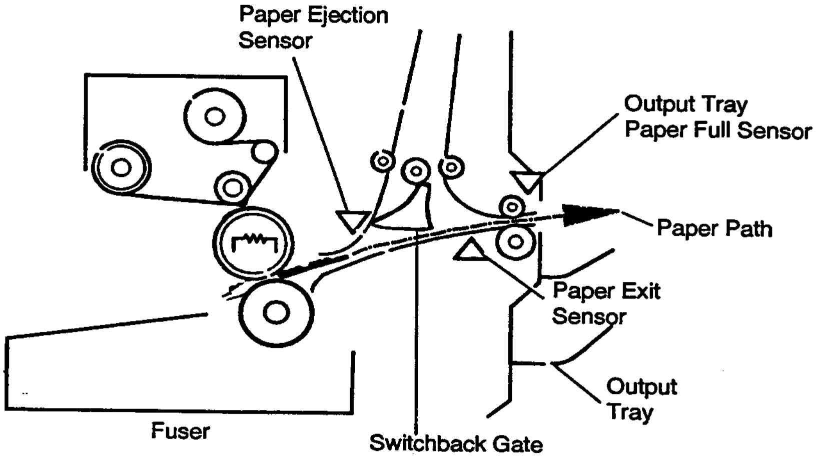
Fusing

After the toner image has been applied to the paper, it passes through the fuser. A heated roller melts the toner and pressure drives it into the paper. The melted toner bonds to the paper. An oil supply keeps the heated roller lubricated so that the melted toner does not adhere to the roller. After fusing, the paper advances to the output tray. When the printer is idle, the heated roller is held at a temperature of 160°C. The heated roller is set to 165°C for 600 dpi printing and 145°C for 1200 dpi printing. For transparency film and other media the fuser is set to 165°C and ran at half speed. The paper ejection sensor detects the sheet of paper as it leaves the fuser.

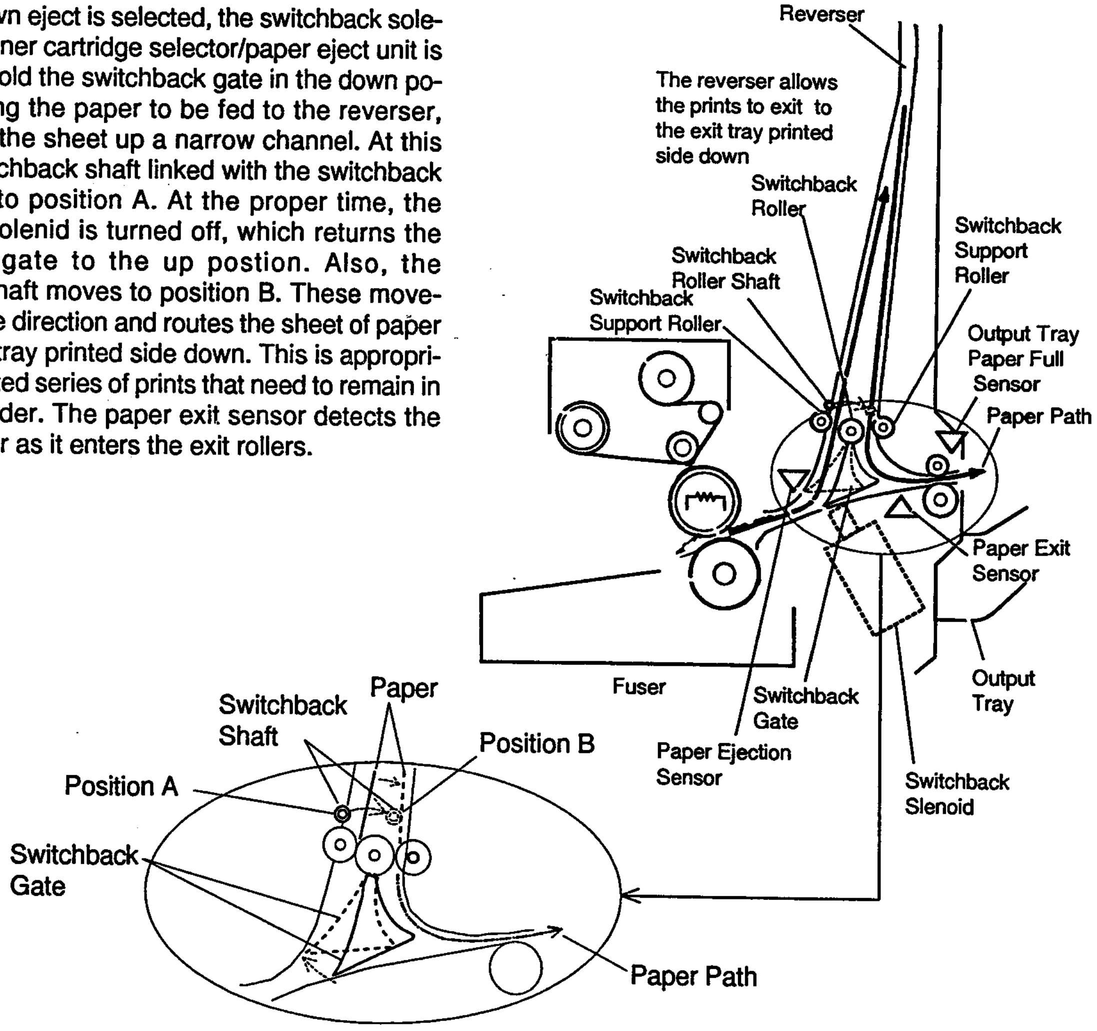


Eject

If face up eject is selected, the paper goes directly to the output tray under the switchback gate, printed side up.


Paper Ejection Sensor
Output Tray Paper Full Sensor
Paper Path
Paper Exit Sensor
Output Tray
Fuser
Switchback Gate

Or, if face down eject is selected, the switchback solenoid on the toner cartridge selector/paper eject unit is activated to hold the switchback gate in the down position, allowing the paper to be fed to the reverser, which drives the sheet up a narrow channel. At this time, the switchback shaft linked with the switchback gate moves to position A. At the proper time, the switchback solenid is turned off, which returns the switchback gate to the up postion. Also, the switchback shaft moves to position B. These movements reverse direction and routes the sheet of paper to the output tray printed side down. This is appropriate for a collated series of prints that need to remain in first-to-last order. The paper exit sensor detects the sheet of paper as it enters the exit rollers.


Reverser
The reverser allows the prints to exit to the exit tray printed side down
Switchback Roller
Switchback Roller Shaft
Switchback Support Roller
Switchback Support Roller
Output Tray Paper Full Sensor
Paper Path
Paper Exit Sensor
Output Tray
Fuser
Switchback Gate
Paper Ejection Sensor
Switchback Slenoid
Switchback Shaft
Paper
Position B
Position A
Switchback Gate
Paper Path

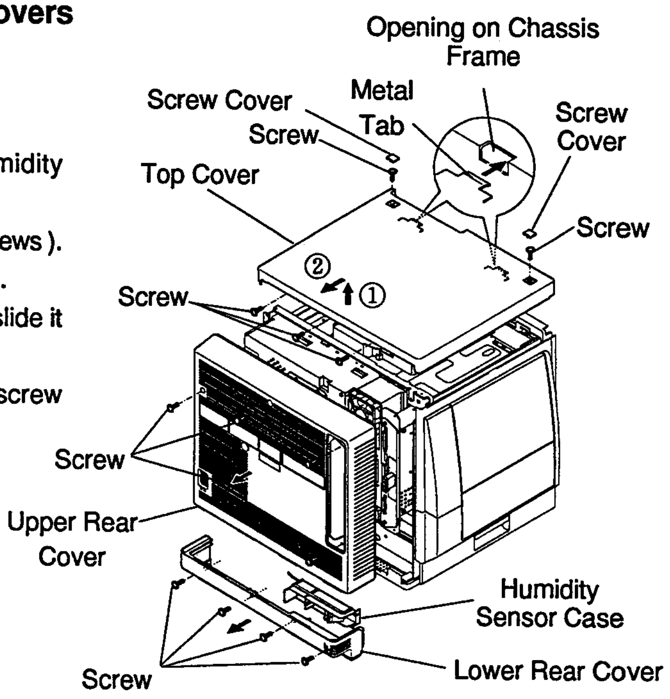
5. Removal and Replacement Procedures

Caution:

The imaging unit (OPC belt and accumulator belt) is extremely light sensitive. Make sure that it is not exposed to light for more than 45 seconds, or it may damage the unit. Never expose the imaging unit to direct sunlight. When servicing the printer, ensure that the imaging unit is not exposed to light. If necessary, remove it and store in a dark place.

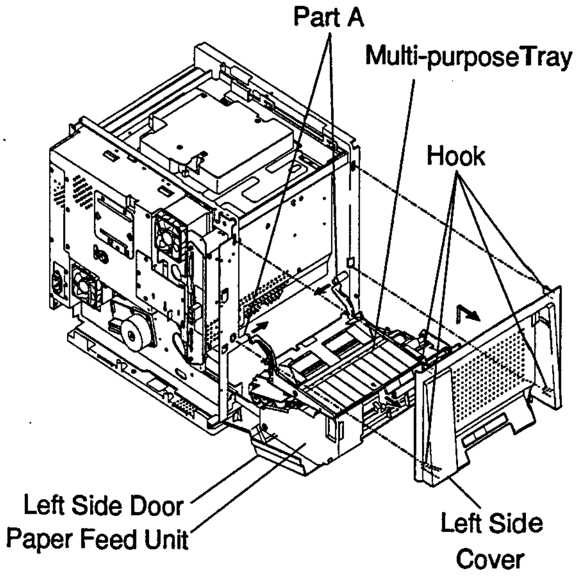
5.1 Upper Rear, Lower Rear and Top Covers

1. Remove the upper rear cover (4 screws).
2. Remove the lower rear cover (4 screws).
3. Separate the lower rear cover from the humidity sensor case.
4. Remove the top cover (2 screw covers and 5 screws).
   The front of the top cover is held by metal tabs.
   Tilt the top cover up from the rear (arrow ①), slide it back slightly (arrow ②), and remove it.
   (If the scanner guide pins are installed the 2 screw covers are not present.)

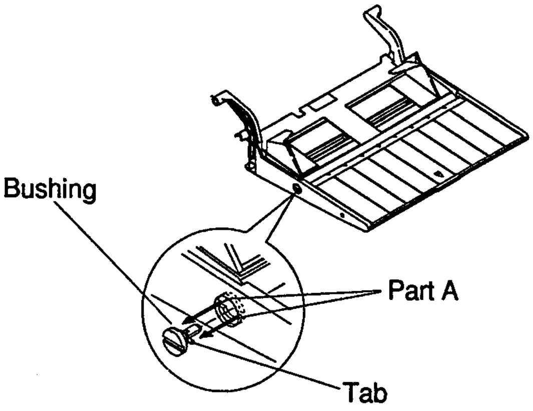

Opening on Chassis Frame
Screw Cover
Metal Tab
Screw
Screw Cover
Top Cover
Screw
②
①
Screw
Screw
Upper Rear Cover
Humidity Sensor Case
Screw
Lower Rear Cover

5.2 Left Side Cover and Multi-purpose Tray

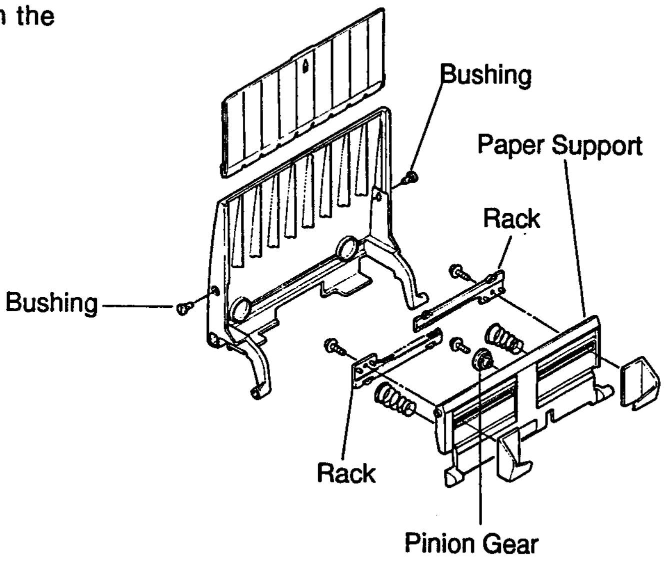
1. Removbe the upper rear cover and top cover (see section 5.1).
2. Open the left side door.
3. Pull out the paper feed unit.
4. Lower the multi-purpose tray.
5. Remove the left side cover while releasing the 4 hooks from the printer frame.
6. Remove the multi-purpose tray by sliding part A in the direction indicated by the arrow.


Part A
Multi-purposeTray
Hook
Left Side Door
Paper Feed Unit
Left Side Cover

7. Align the tab of the bushing with part A by turning the tab.
8. Remove the 2 bushings.

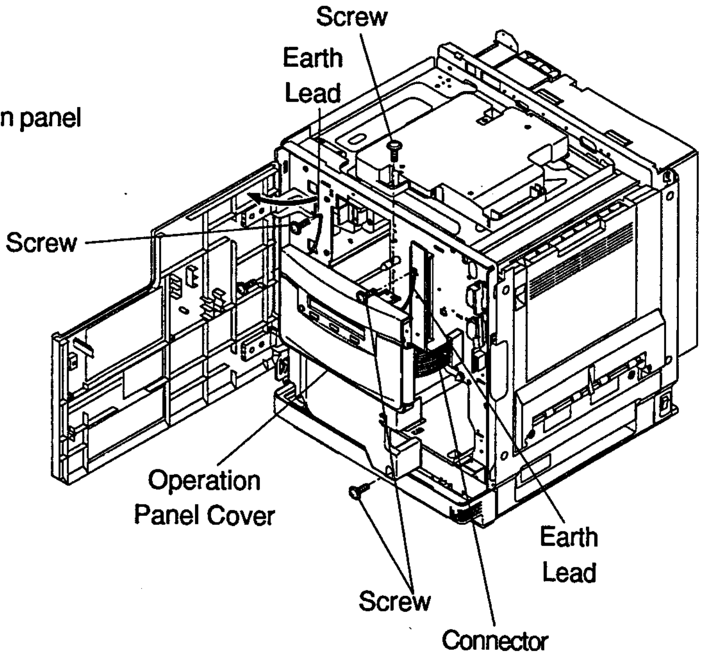

Bushing
Part A
Tab

9. Separate the paper support assembly from the holder.
10. Remove the pinion gear and racks (3 screws).

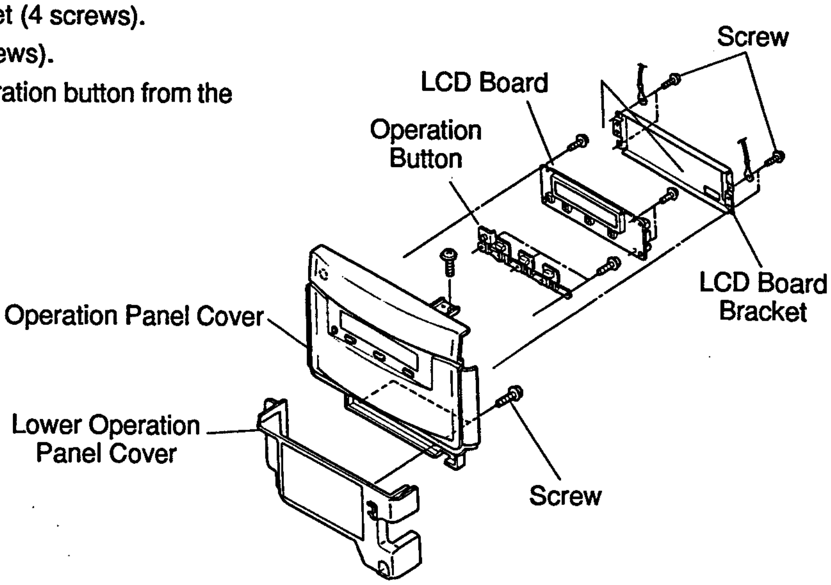

Bushing
Paper Support
Rack
Bushing
Rack
Pinion Gear

5.3 Operation Panel Cover and Printer LCD Board

1. Remove the upper rear cover and top cover (see section 5.1).
2. Open the front cover and remove the operation panel cover assembly (3 screws).
3. Remove the 2 earth lead wires (2 screws).
4. Disconnect the connector.

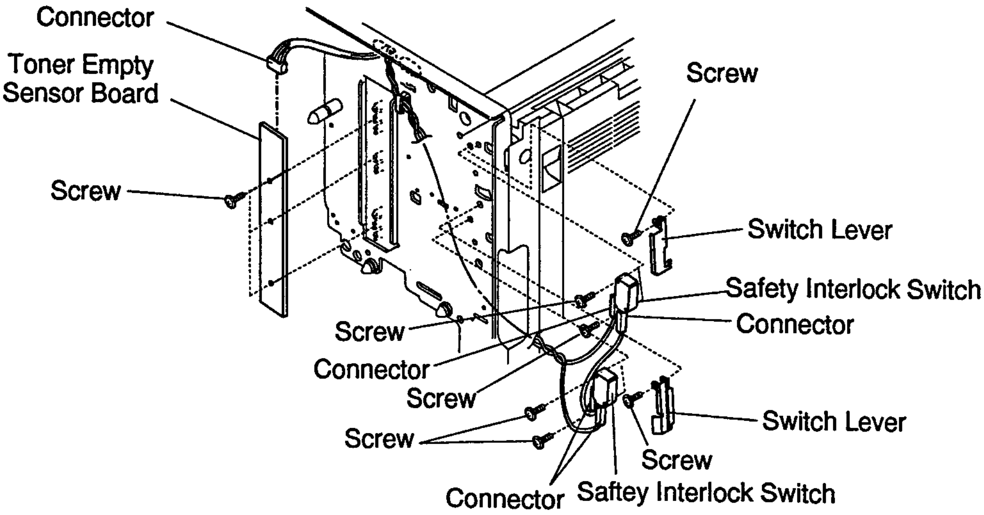

Screw
Earth Lead
Screw
Operation Panel Cover
Earth Lead
Screw
Connector

5. Remove the LCD board bracket (4 screws).
6. Remove the LCD board (4 screws).
7. Remove the 3 screws and operation button from the operation panel cover.


Screw
LCD Board
Operation Button
Operation Panel Cover
LCD Board Bracket
Lower Operation Panel Cover
Screw

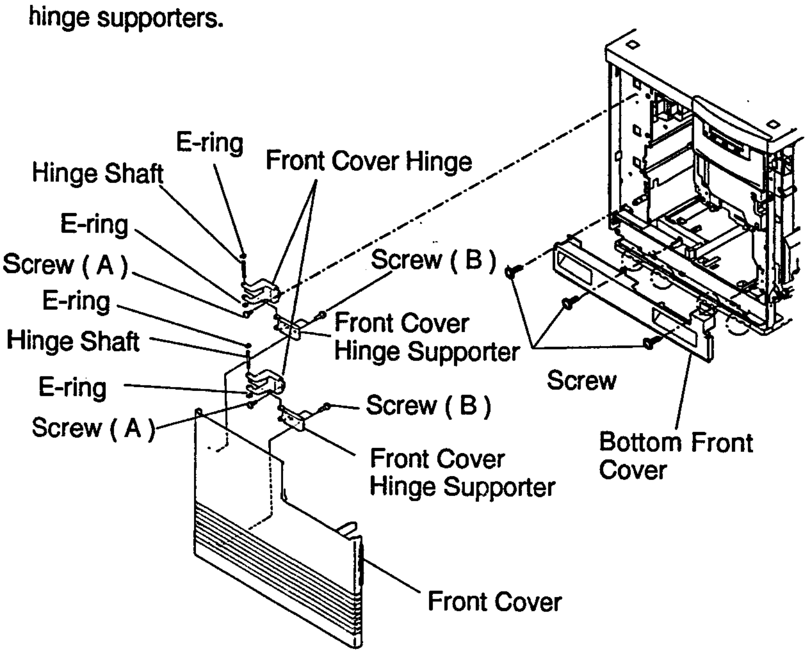
5.4 Safety Interlock Switches and Toner Empty Sensor Board (T)

1. Remove the upper rear cover, top cover and operation panel cover (see sections 5.1 and 5.3).
2. Remove the 3 screws and disconnect the connector on the toner empty sensor board.
3. Remove the toner empty sensor board.
4. Disconnect the 2 connectors from each of 2 safety interlock switches.
5. Remove the 2 screws from each of 2 safety interlock switches and safety interlock switch.
6. Remove the screw from each of switch levers and switch lever.

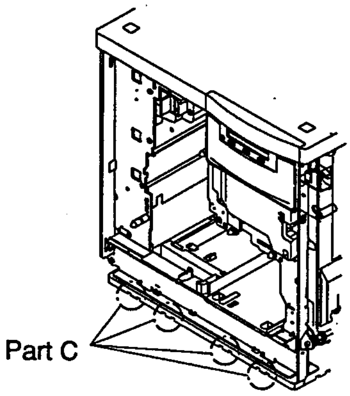

Connector
Toner Empty Sensor Board
Screw
Screw
Switch Lever
Safety Interlock Switch
Connector
Screw
Connector
Screw
Screw
Switch Lever
Screw
Connector
Saftey Interlock Switch

5.5 Front Cover and Bottom Front Cover

1. Open the front cover.
2. Remove the 3 screws and the bottom front cover.
3. Remove the front cover with hinges [4 screws (A)].
4. Remove the hinge assemblies from the front cover [4 screws (B)].
5. Remove the E-rings from the hinge shafts.
   The front cover hinges can now be separated from the front cover hinge supporters.

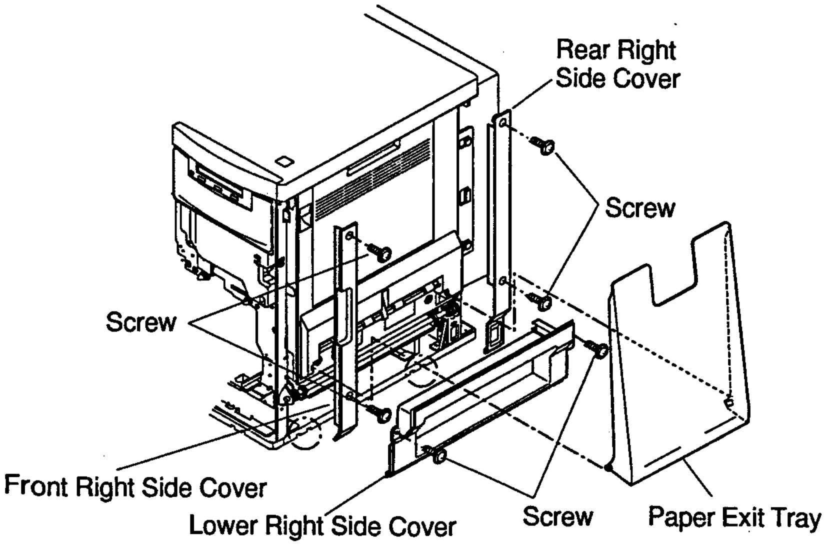

E-ring
Hinge Shaft
Front Cover Hinge
E-ring
Screw (A)
E-ring
Hinge Shaft
E-ring
Screw (A)
Screw (B)
Front Cover
Hinge Supporter
Screw (B)
Front Cover
Hinge Supporter
Screw
Bottom Front
Cover
Front Cover

Note :
The bottom front cover is latched by metal tabs (Part C). When removing or reinstalling these covers, this cover must be released from the tabs or latched with the tabs.

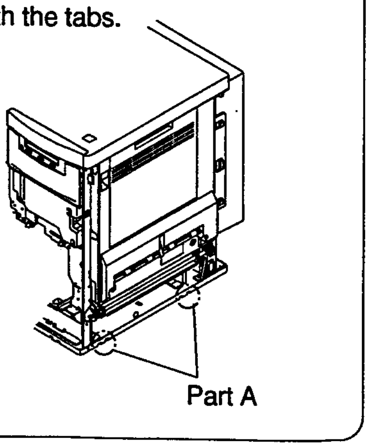


5.6 Front Right Side, Rear Right Side and Lower Right Side Covers

1. Remove the bottom front cover (see section 5.5).
2. Remove the paper exit tray.
3. Remove the front right side cover (2 screws).
4. Remove the rear right side cover (2 screws).
5. Remove the lower right side cover (2 screws).


Rear Right
Side Cover
Screw
Screw
Front Right Side Cover
Lower Right Side Cover
Screw
Paper Exit Tray

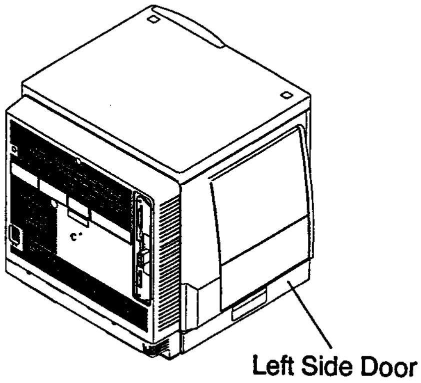
Note :
The lower right side cover is latched by metal tabs (Part A). When removing or reinstalling these covers, this cover must be released from the tabs or latched with the tabs.



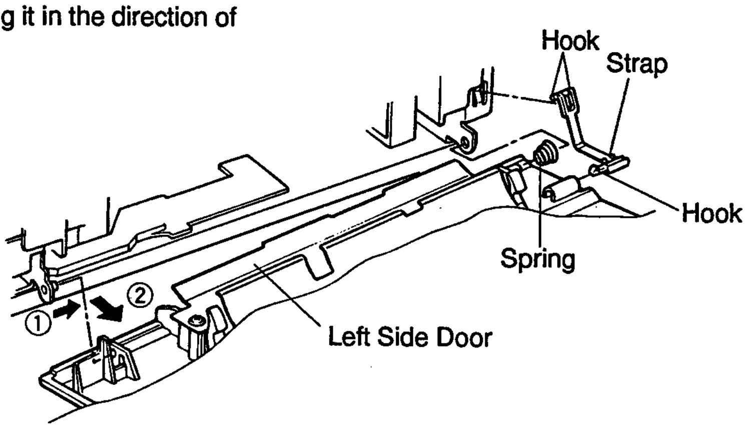
5.7 Left Side Door

5.7.1 Left Side Door Removal

1. Open the left side door.


Left Side Door

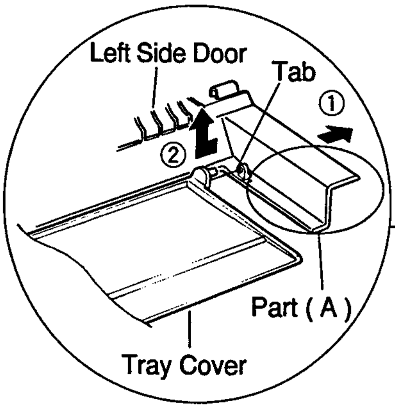
2. Remove the black strap by releasing the hooks.
3. Remove the left side door by sliding it in the direction of arrows ①, ②.

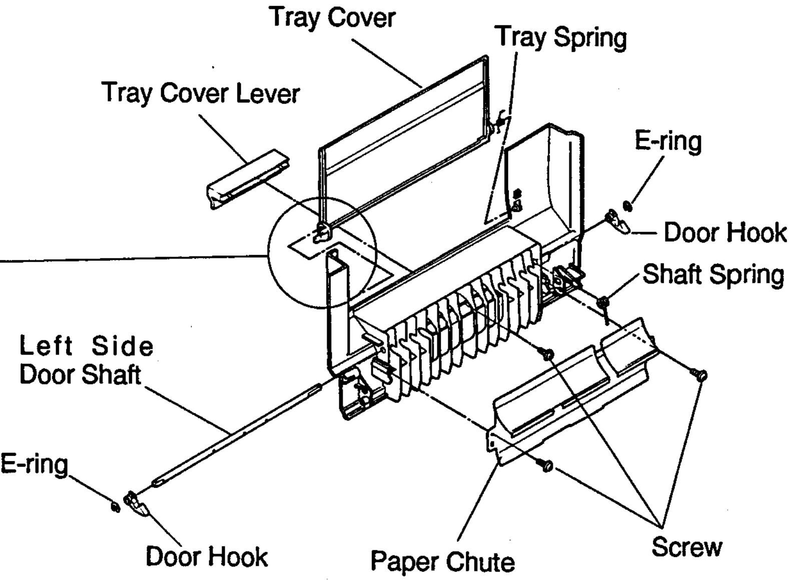

Hook
Strap
Hook
Spring
②
①
Left Side Door

5.7.2 Left Side Door Sub Assembly

1. Remove the tray cover by sliding it in direction of arrow ② while slightly deflecting the part (A) of left side door in the direction of arrow ① to release the tray cover from the tab on the left side door as shown in the Fig-1.
2. Remove the paper chute (2 screws).
3. Remove the tray cover lever (1 screw).
4. Remove the 2 E-rings and 2 door hooks.
5. Remove the left side door shaft and shaft spring by pull out the door shaft.

(Fig-1)


Left Side Door
Tab
①
②
Part (A)
Tray Cover


Tray Cover
Tray Spring
Tray Cover Lever
E-ring
Door Hook
Shaft Spring
Left Side Door Shaft
E-ring
Door Hook
Paper Chute
Screw

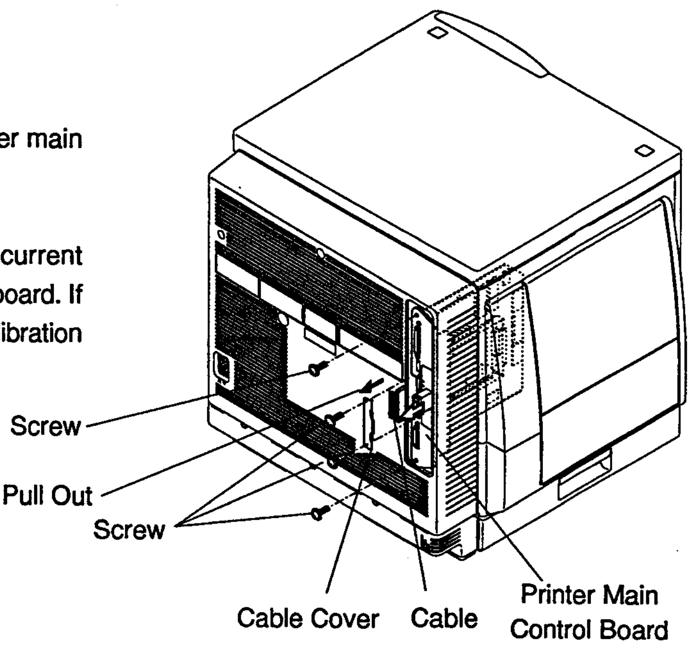
5.8 Printer Main Control Board, HSYNC Board and Network Relay Board

5.8.1 Printer Main Board Removal

1. Remove the cable cover (2 screws).
2. Disconnect the connector by pulling the tab.
3. Remove the 2 screws, then pull out the printer main board.

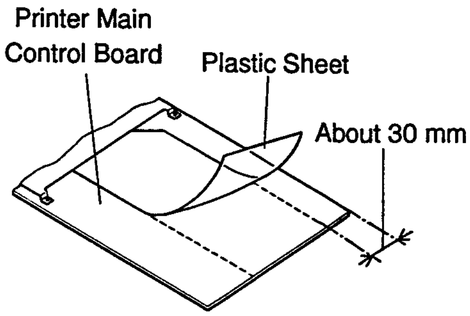
   Note:

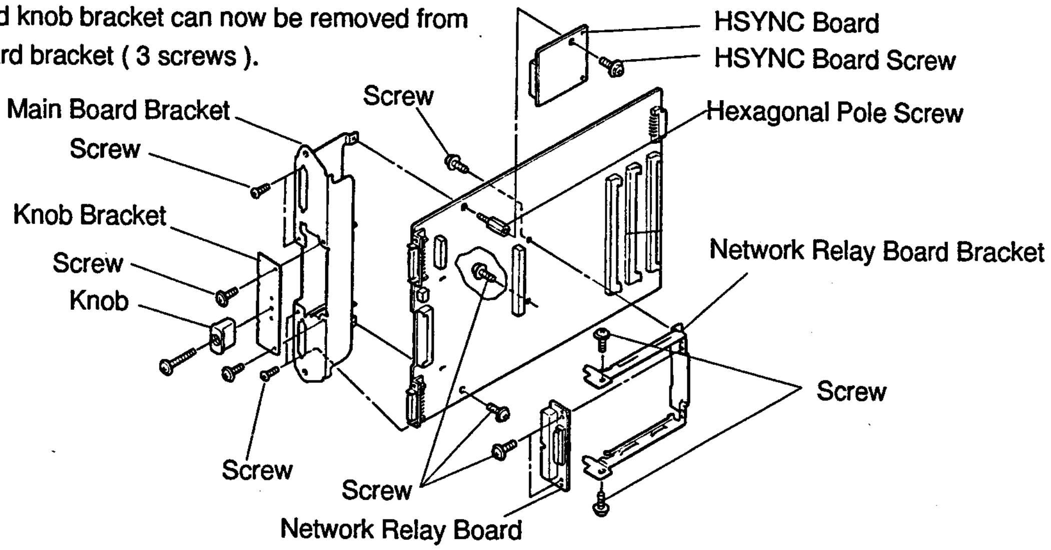
   When replacing the printer main board, the current EEPROM (IC9) must be installed on the new board. If the EEPROM is damaged, the color density calibration must be reset. Refer to Section 7.2.


Screw
Pull Out
Screw
Cable Cover
Cable
Printer Main Control Board

5.8.2 Printer Main Control Board Disassembly, HSYNC Board and Network Relay Board

1. Remove the HSYNC board screw.
2. Remove the HSYNC board by disconnecting it from the printer main control board.
3. Remove the network relay board bracket with the network relay board(4 screws).
4. Peel off the plastic sheet from the printer main control board.
   (When reinstalling the plastic sheet, stick it as shown right.)
5. Separate the network relay board from the network relay board bracket (2 screws).
6. Remove the hexagonal pole screw.
7. Remove the screw from the printer main control board.
8. Remove the 4 screws from the connectors.
9. Separate the main board bracket from the printer main control board.
10 The knob and knob bracket can now be removed from the main board bracket (3 screws).

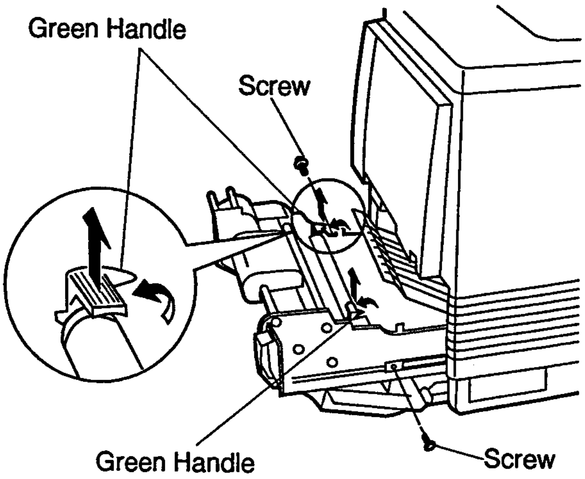

Printer Main Control Board
Plastic Sheet
About 30 mm


HSYNC Board
HSYNC Board Screw
Main Board Bracket
Screw
Hexagonal Pole Screw
Screw
Knob Bracket
Screw
Network Relay Board Bracket
Knob
Screw
Screw
Screw
Network Relay Board

5.9 Paper Feed Unit

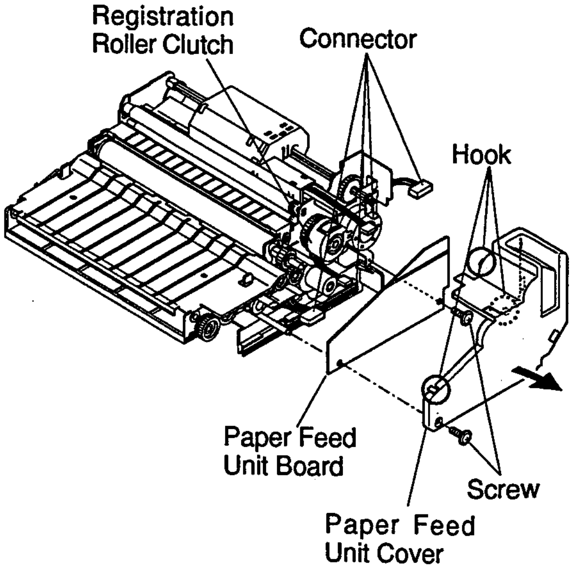
5.9.1 Paper Feed Unit Removal

1. Open the left side door to access the paper feed unit.
2. Slide out the paper feed until it stops.
3. Push in on the two green tabs to unlock the paper chute. Lift the paper chute until it catches, in the open position.
4. Rotate the green handles on the transfer roller. Lift out the transfer roller/waste bin (consumable) to avoid toner spillage.
5. Remove the 2 screws and paper feed unit.
6. Slide the paper feed unit off the rails.

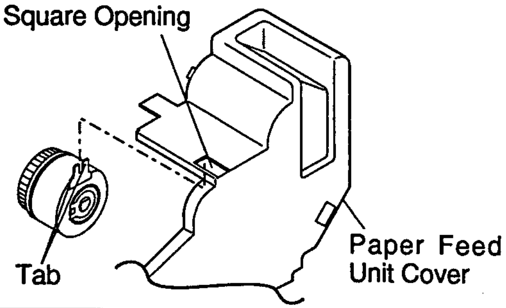

Green Handle
Screw
Green Handle
Screw

5.9.2 Paper Feed Unit Board and M.P.T Paper Out/Registration Sensor Board

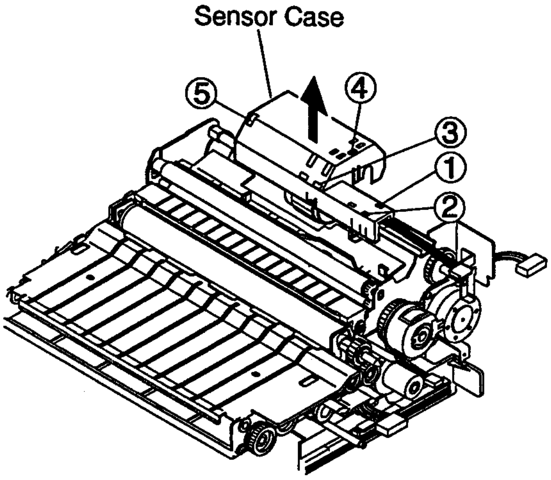
1. Remove the screw from the paper feed unit cover.
2. Remove the paper feed unit cover while releasing the 2 hooks.
3. Remove the paper feed unit board (1 screw).
4. Disconnect the 4 connectors on the paper feed unit board.


Registration Roller Clutch
Connector
Hook
Paper Feed Unit Board
Screw
Paper Feed Unit Cover

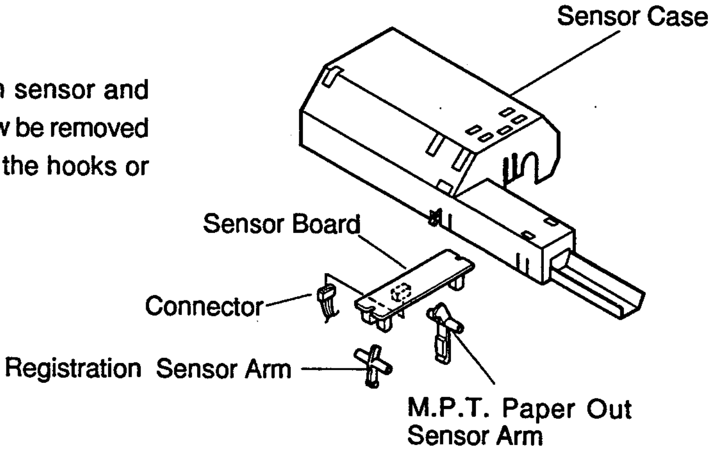
Note :
When reinstalling the paper feed unit cover, the tabs of the registration roller clutch must be aligned with the square opening.


Square Opening
Tab
Paper Feed Unit Cover

5. Remove the sensor case with the sensors after releasing the 5 hooks in order ① ~ ⑤.

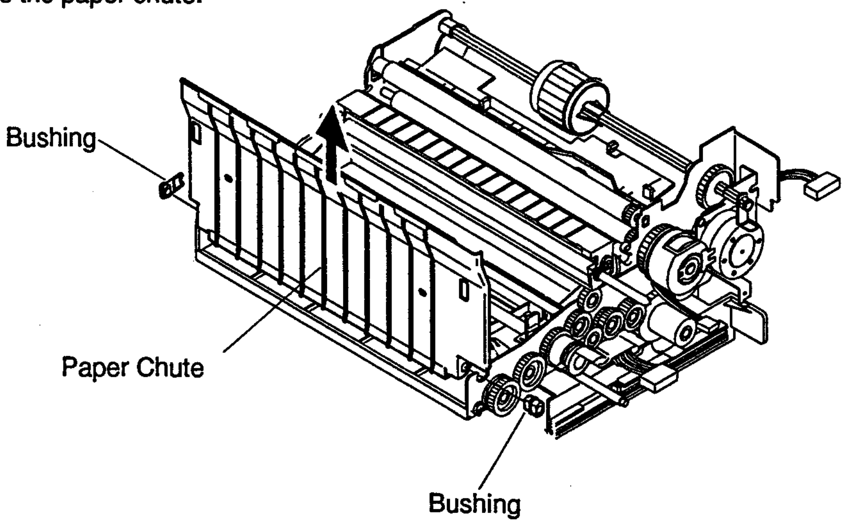

Sensor Case
⑤
④
③
①
②

The M.P.T paper out sensor, registration sensor and M.P.T Paper Out/reg. Sensor Board can now be removed from the sensor case by releasing it from the hooks or support tabs.

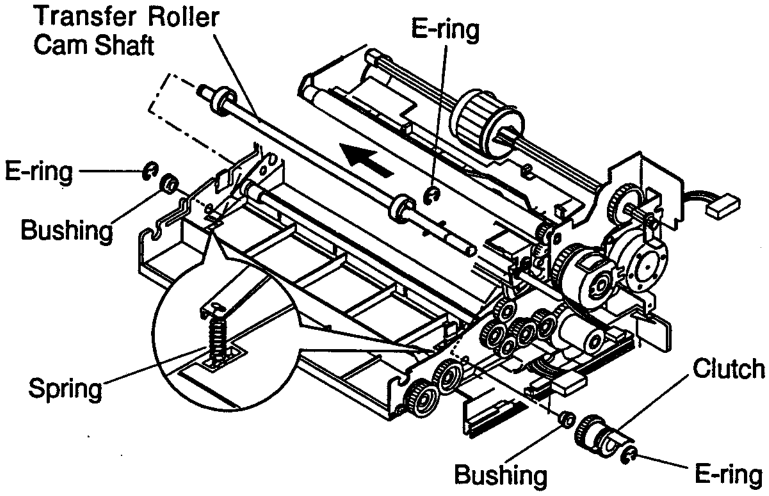

Sensor Case
Sensor Board
Connector
Registration Sensor Arm
M.P.T. Paper Out Sensor Arm

5.9.3 Transfer Roller Clutch, Transfer Roller Holder, Cleaning Roller Holder and Registration Roller

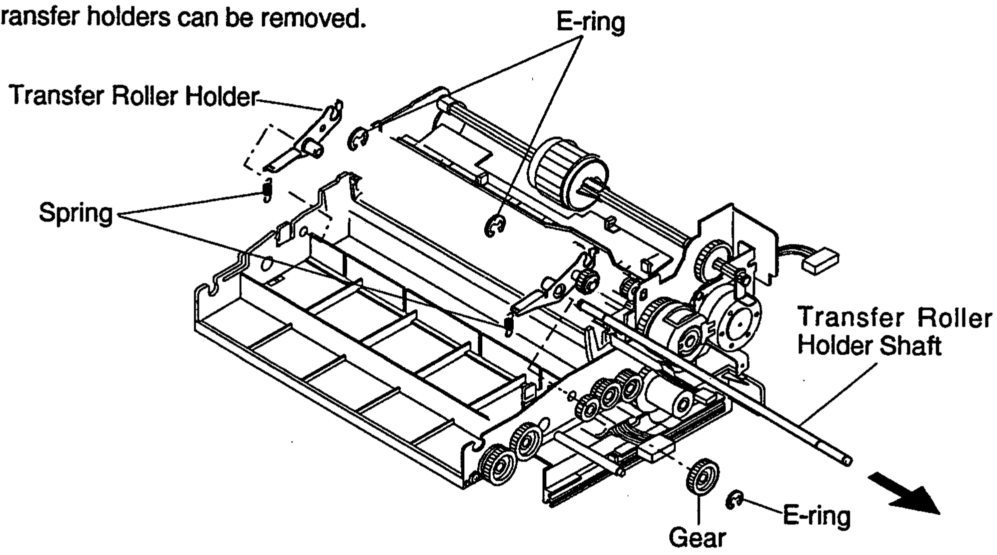
1. Pivot the paper chute to an upright position (as shown).
2. Lift and remove the paper chute.


Bushing
Paper Chute
Bushing

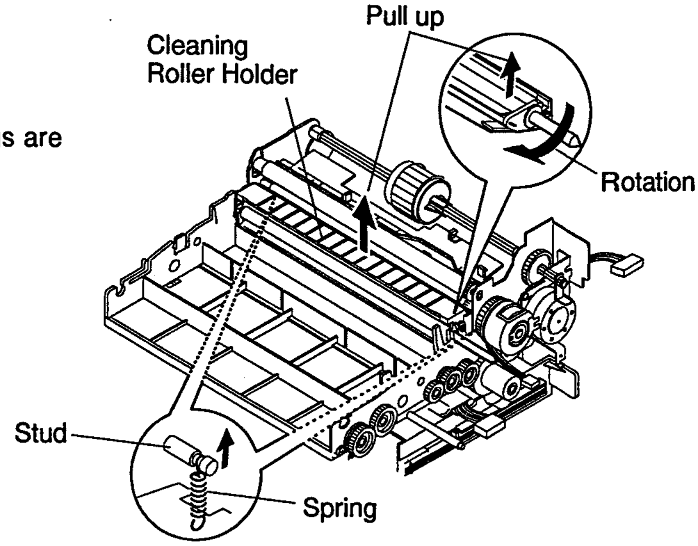
3. Remove the 3 E-rings and 2 springs.
4. Remove the clutch, 2 bushings and transfer roller cam shaft.


Transfer Roller Cam Shaft
E-ring
E-ring
Bushing
Spring
Clutch
Bushing
E-ring

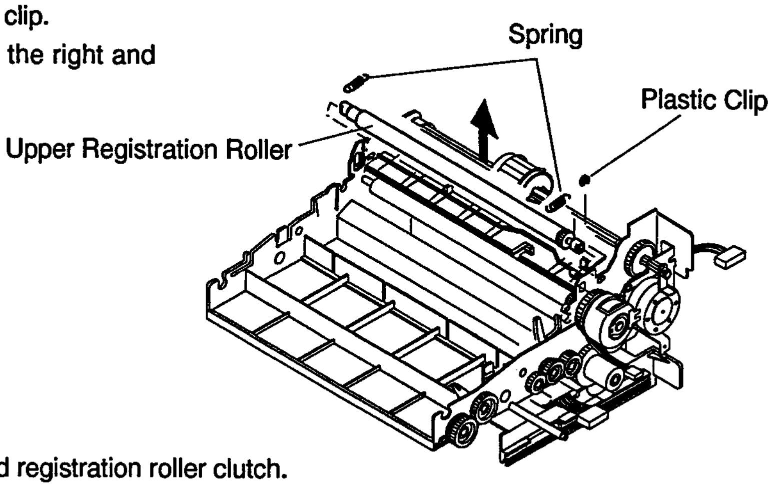
5. Remove the E-ring and gear from the transfer roller holder shaft.
6. Remove the 2 E-rings, then slide out the transfer roller holder shaft.
   The right and left transfer holders can be removed.


E-ring
Transfer Roller Holder
Spring
Transfer Roller Holder Shaft
E-ring
Gear

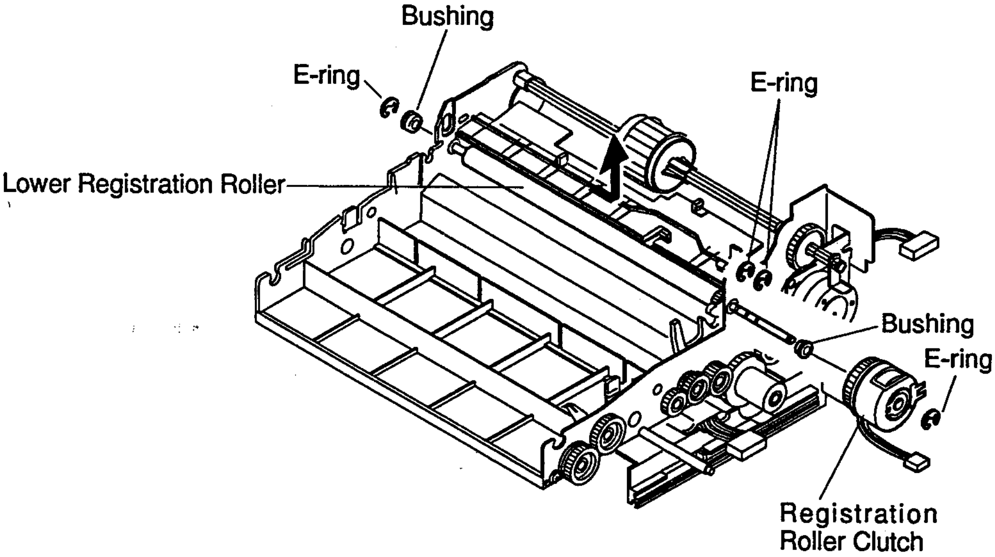
7. Release the 2 springs from the spring studs (located on back side of the paper feed unit).
8. Rotate the cleaning roller holder up.
9. Lift and remove the cleaning roller holder.
   The cleaning pressure roller and 2 bushings are removed from the holder.


Pull up
Cleaning Roller Holder
Rotation
Stud
Spring

10. Remove the 2 springs and the plastic clip.
11. Move the upper registration roller to the right and remove.

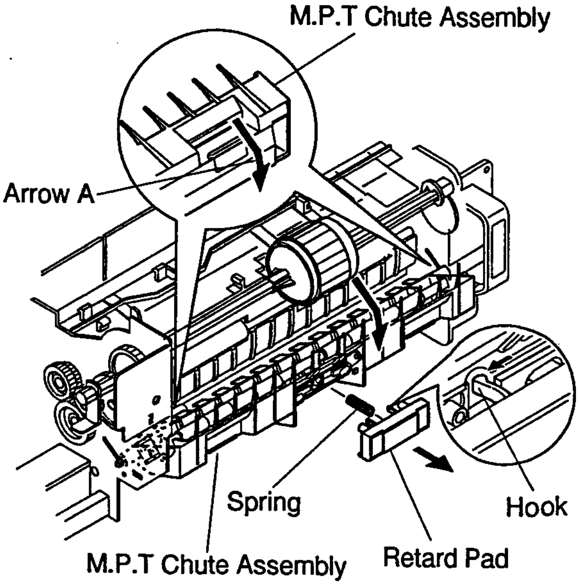

Spring
Plastic Clip
Upper Registration Roller

12. Remove the 4 E-rings, 2 bushings and registration roller clutch.
13. Remove the lower registration.


Bushing
E-ring
E-ring
Lower Registration Roller
Bushing
E-ring
Registration Roller Clutch

5.9.4 M.P.T Retard Pad

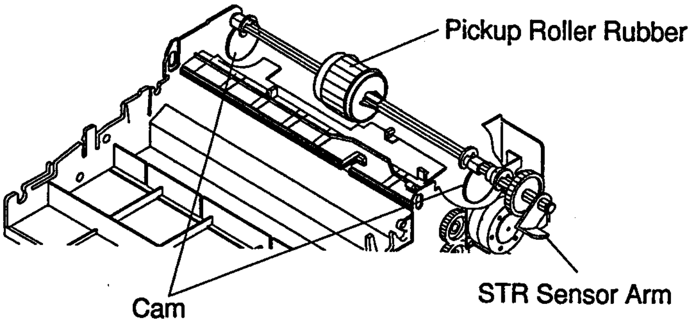
Open the M.P.T chute assembly with the retard pad by sliding it in the direction of arrow A.
Remove the retard pad by releasing the hooks.


M.P.T Chute Assembly
Arrow A
Spring
Hook
M.P.T Chute Assembly
Retard Pad

5.9.5 M.P.T Motor, M.P.T Pickup Roller and M.P.T Pickup Roller Shaft

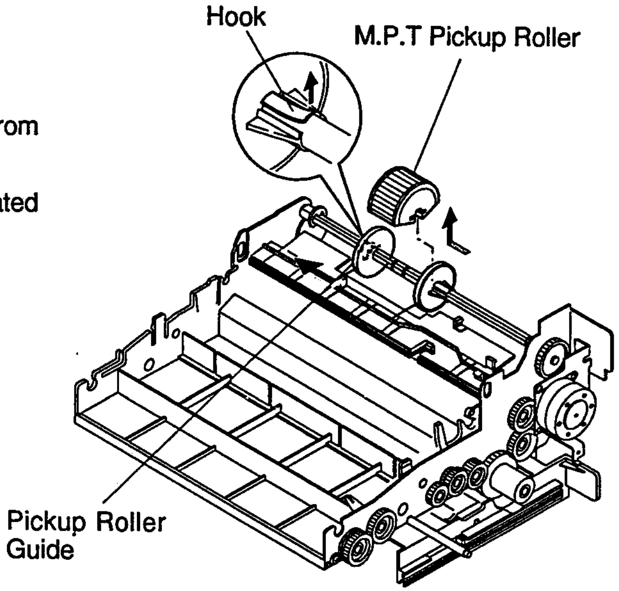
Note

When reinstalling the pickup roller and cam to the M.P.T pickup roller shaft, the rubber side of the M.P.T pickup roller, cams and STR sensor arm must be positioned as shown below.


Pickup Roller Rubber
Cam
STR Sensor Arm

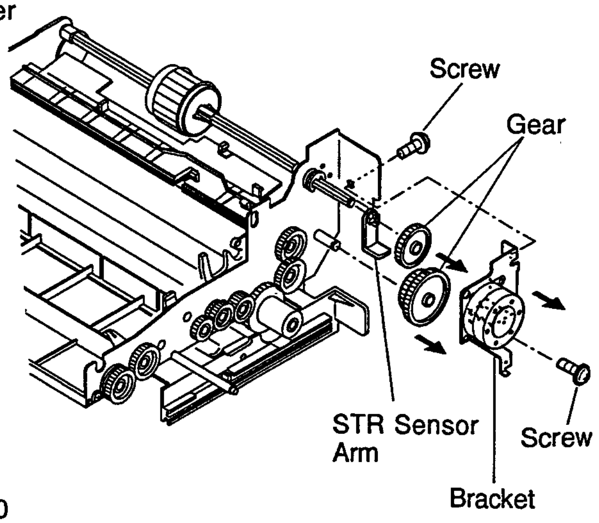
5.9.5.1 M.P.T Pickup Roller

1. Release the hook of the pickup roller guide roller from the M.P.T pickup roller shaft.
2. Slide the pickup guide roller in the direction indicated by the arrow.
3. Remove the M.P.T pickup roller.

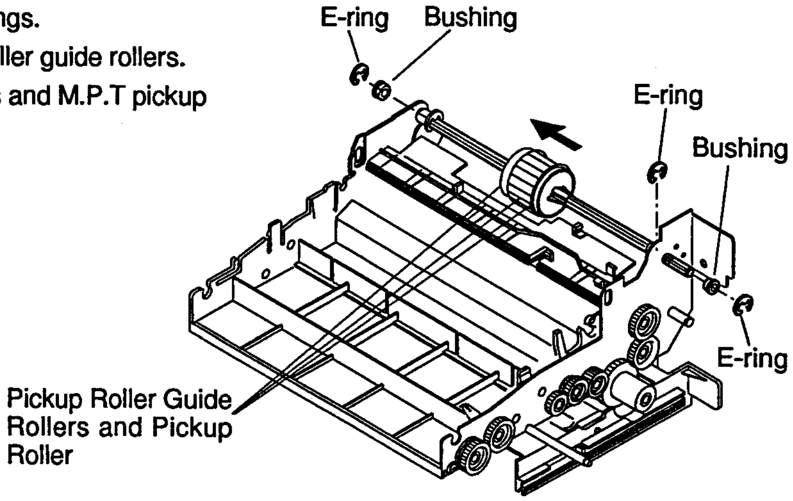

Hook
M.P.T Pickup Roller
Pickup Roller Guide

5.9.5.2 M.P.T Motor and M.P.T Pickup Roller Shaft

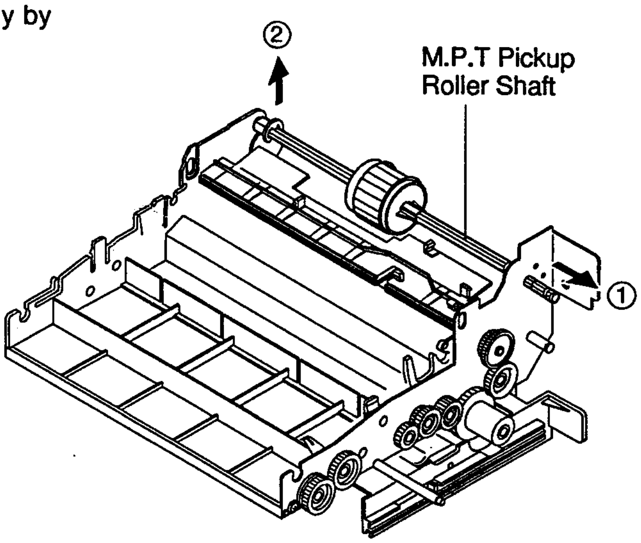
1. Remove the motor bracket with the motor (2 screws).
2. Remove the 2 gears and STR sensor arm after releasing the hooks.


Screw
Gear
STR Sensor Arm
Screw
Bracket

3. Remove the 3 E-rings and 2 bushings.
4. Release the hooks of the pickup roller guide rollers.
5. Move the pickup roller guide rollers and M.P.T pickup roller in the arrow direction.


E-ring
Bushing
E-ring
Bushing
E-ring
Pickup Roller Guide Rollers and Pickup Roller

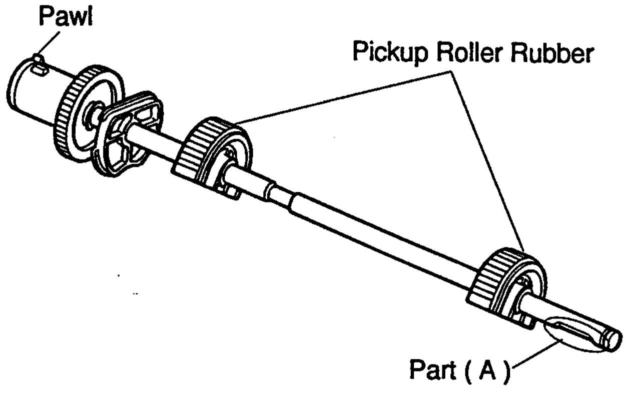
6. Remove the M.P.T pickup roller shaft assembly by sliding it in the order of the arrows ① ~ ②.
(If necessary, remove the M.P.T pickup roller.)


②
M.P.T Pickup Roller Shaft
①

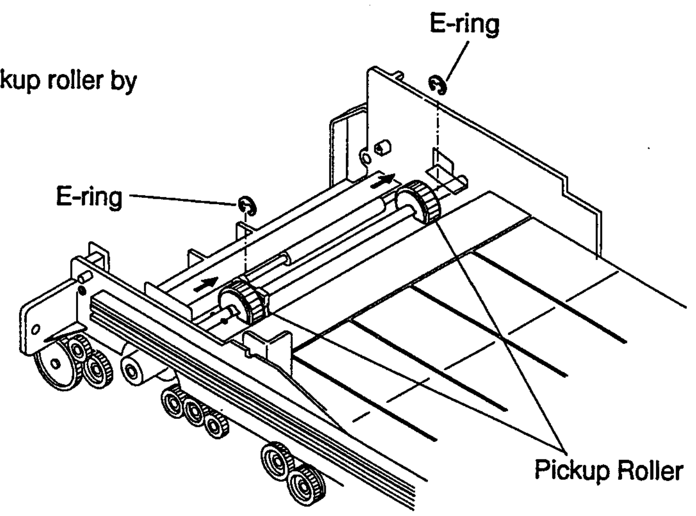
5.9.6 Pickup Roller, Pickup Roller Shaft Assembly and Paper Empty Sensor Arm

Note

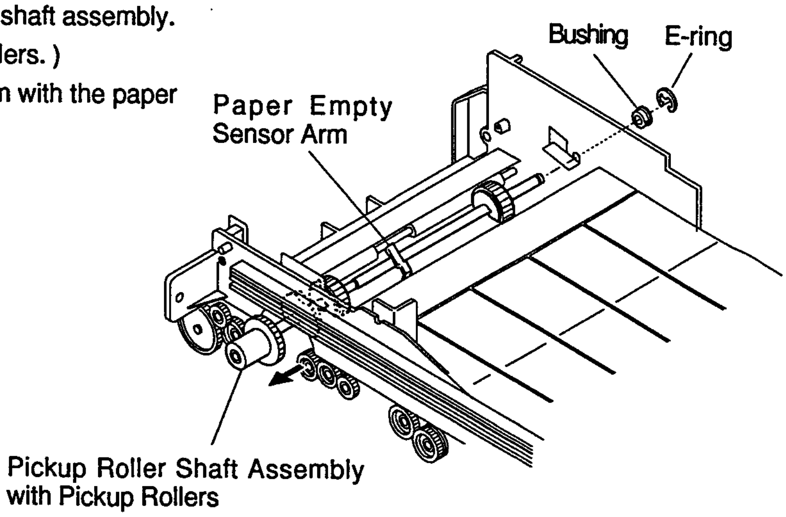
When reinsalling the pickup roller to the pickup roller shaft assembly with the clutch, the rubber side of both pickup rollers, the pawl on the clutch, and part (A) of the pickup roller shaft must be positioned as shown below.


Pawl
Pickup Roller Rubber
Part (A)

1. Place the unit face down.
2. Remove the E-ring, then remove the pickup roller by sliding it in the direction of the arrow.


E-ring
E-ring
Pickup Roller

3. Remove the E-ring and pickup roller shaft assembly. (If necessary, remove the pickup rollers.)
4. Remove the paper empty sensor arm with the paper out sensor arm.


Bushing
E-ring
Paper Empty Sensor Arm
Pickup Roller Shaft Assembly with Pickup Rollers

5.9.7 Paper Feed Roller and Paper Feed Unit Frame

Remove the following parts :

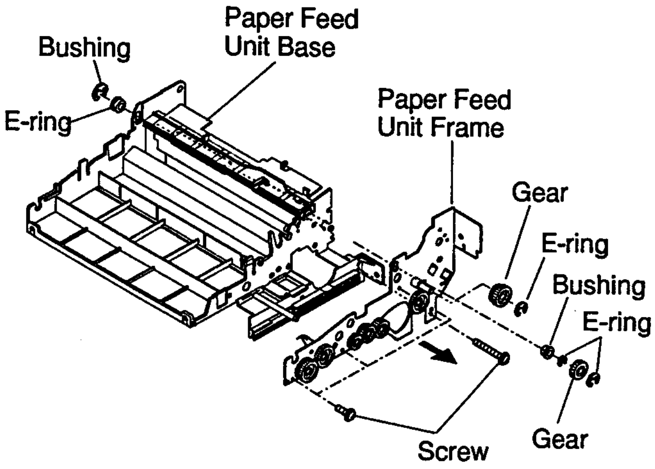
a. Paper Feed Unit Cover, Paper Feed Unit Board, Sensor Case :(see section 5.9.2)

b. Transfer Roller Cam Shaft, Transfer Roller Holder Shaft, Cleaning Roller Holder and Registration Roller :(see section 5.9.3)

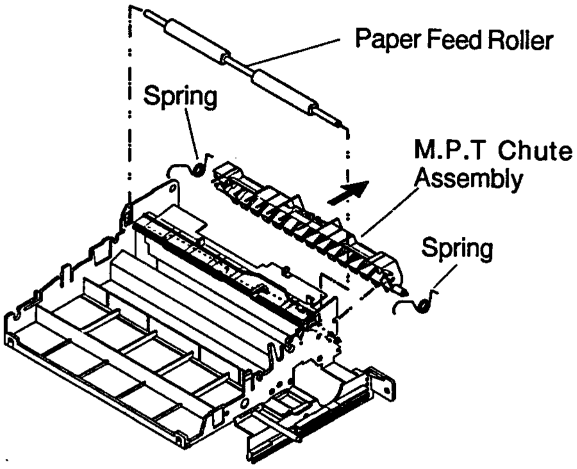
c. M.P.T Motor and M.P.T Pickup Roller Shaft :(see 5.9.5)

d. Pickup Roller Shaft and Paper Empty Sensor Arm :(see 5.9.6)

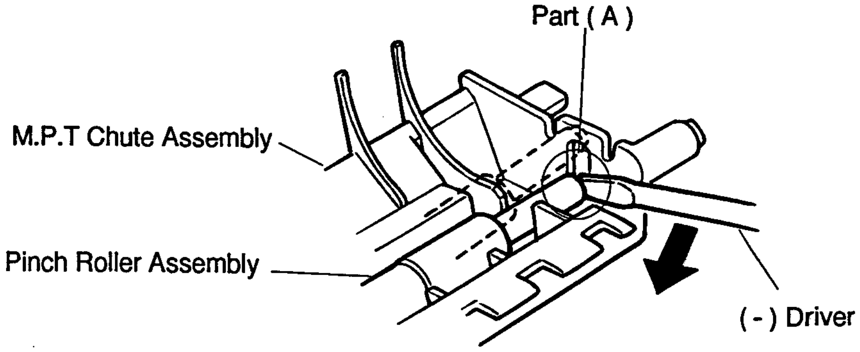
1. Remove the 3 E-rings, 2 gears and bushing.
2. Remove the 4 screws from the paper feed unit frame.
3. Remove the paper feed unit frame from the paper feed unit base.


Bushing
E-ring
Paper Feed Unit Base
Paper Feed Unit Frame
Gear
E-ring
Bushing
E-ring
Screw
Gear

4. Remove the paper feed roller from the paper feed unit base.
5. Remove the spring and M.P.T chute assembly.


Paper Feed Roller
Spring
M.P.T Chute Assembly
Spring

6. Remove the 2 springs from the M.P.T chute assembly.
7. Remove the pinch roller assembly while distoring the part (A) of the M.P.T Chute using the (-) dirver.

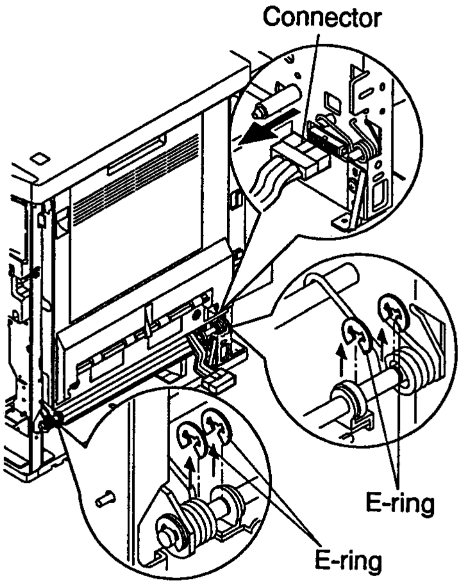

Part (A)
M.P.T Chute Assembly
Pinch Roller Assembly
(-) Driver

5.10 Toner Cartridge Selector/Paper-eject Unit

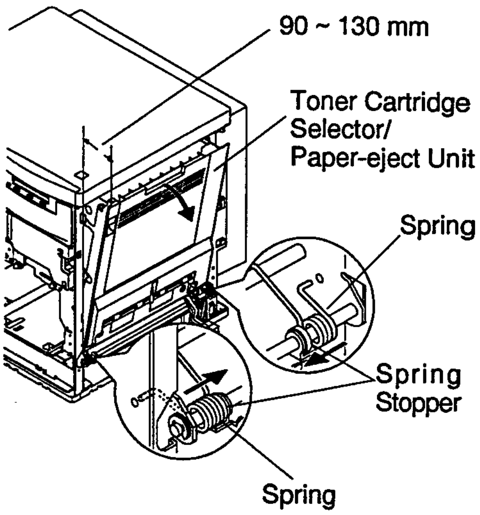
5.10.1 Toner Cartridge Selector/Paper-eject Unit Removal

1. Remove the paper exit tray, front right side cover, lower right side cover, rear right side cover, bottom front cover (see sections 5.5 and 5.6).

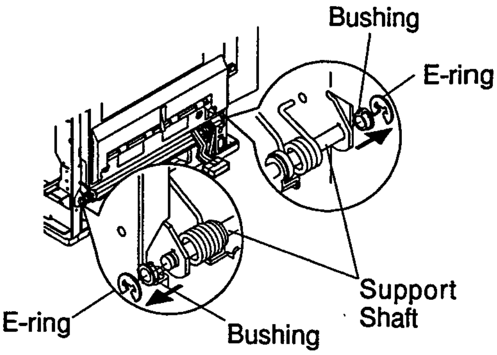
2. Remove the 4 E-rings and disconnect the connector.


Connector
E-ring
E-ring

3. To relive spring tension open the toner cartridge selector/paper-eject unit.
4. Slide the spring stoppers and springs in the direction of the arrows to unlatch the springs from the printer frame.


90 ~ 130 mm
Toner Cartridge Selector/ Paper-eject Unit
Spring
Spring Stopper
Spring

5. Close the unit.
6. Remove the 2 E-rings and 2 bushings.
7. Slide the supporter shaft to the right or left, and remove the unit.


Bushing
E-ring
Support Shaft
E-ring
Bushing

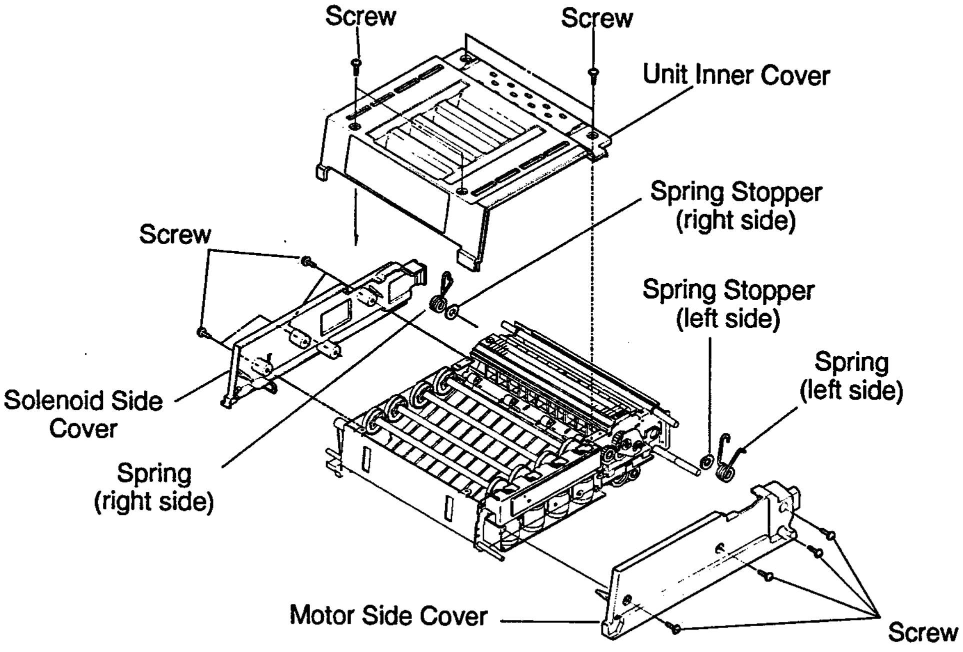
Note :

When reinstalling the toner cartridge selector/paper-eject unit, remove the solenoid side cover and motor side cover from the unit (see the section 5.10.2.1). Reinstall the unit on the printer by performing the procedure in reverse order.

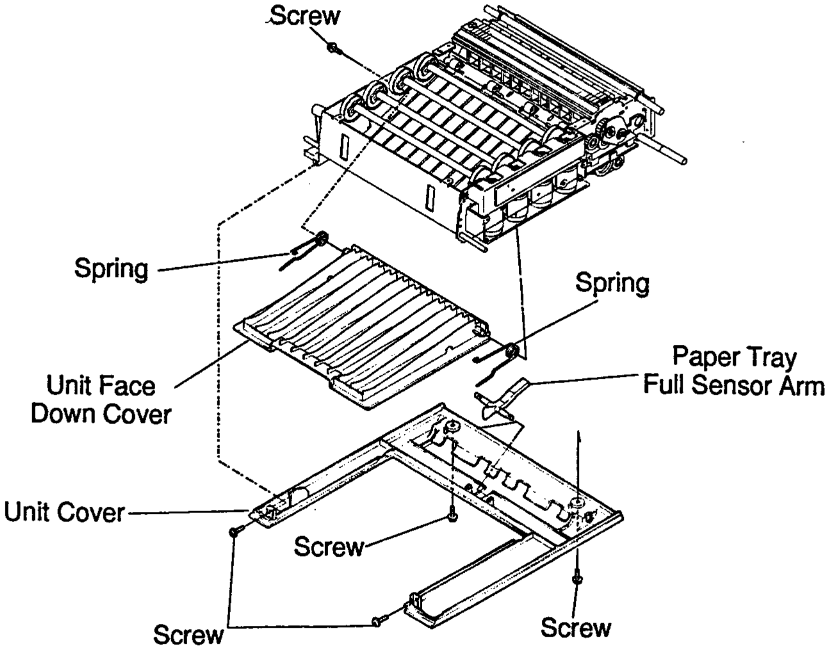
5.10.2 Covers, Sensor Boards (Paper Ejection, Paper Exit, Paper Tray Full) and Paper Eijection Roller

5.10.2.1 Covers

1. Remove the spring stopper (right side) and spring (right side).
2. Remove the 12 screws from the motor side cover, solenoid side cover and unit inner cover.
3. Remove the covers, spring stopper (left side) and spring (left side) .


Screw
Screw
Unit Inner Cover
Spring Stopper
(right side)
Screw
Spring Stopper
(left side)
Spring
(left side)
Solenoid Side
Cover
Spring
(right side)
Motor Side Cover
Screw

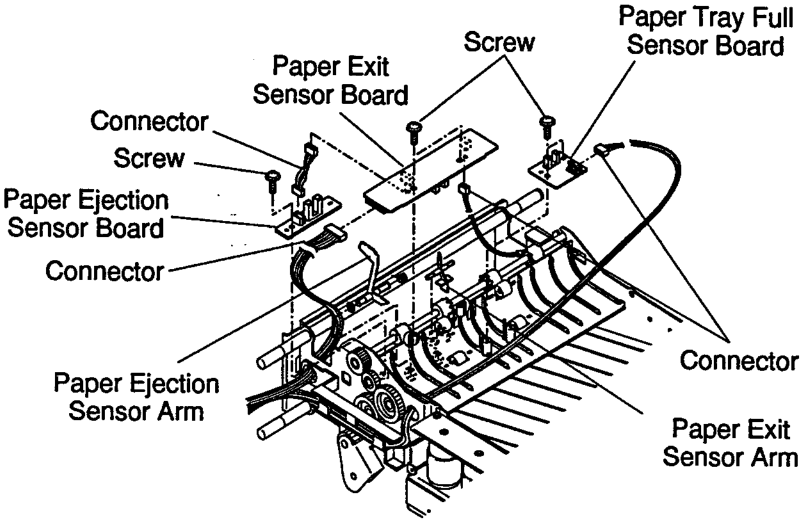
4. Remove the 4 screws and unit cover.
5. Release the 2 springs from the chassis frames and screw, then remove the unit face down cover and sensor paper tray full sensor arm.


Screw
Spring
Spring
Unit Face
Down Cover
Paper Tray
Full Sensor Arm
Unit Cover
Screw
Screw
Screw

5.10.2.2 Sensor Boards (Paper Ejection, Paper Exit, Paper Tray Full) and Paper Ejection Roller

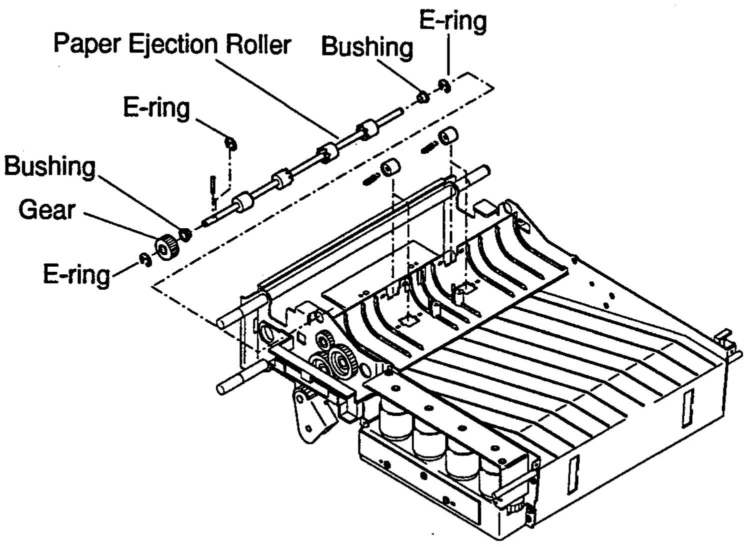
Sensor Boards (Paper Ejection, Paper Exit, Paper Tray Full)

1 Disconnect the connector from the paper tray full sensor board.
2. Remove the 2 screws from the paper ejection sensor board.
3. Disconnect the 3 connectors and paper ejection sensor board.
4. Remove the screw and paper ejection sensor board.


Paper Tray Full Sensor Board
Screw
Paper Exit Sensor Board
Connector
Screw
Paper Ejection Sensor Board
Connector
Paper Ejection Sensor Arm
Connector
Paper Exit Sensor Arm

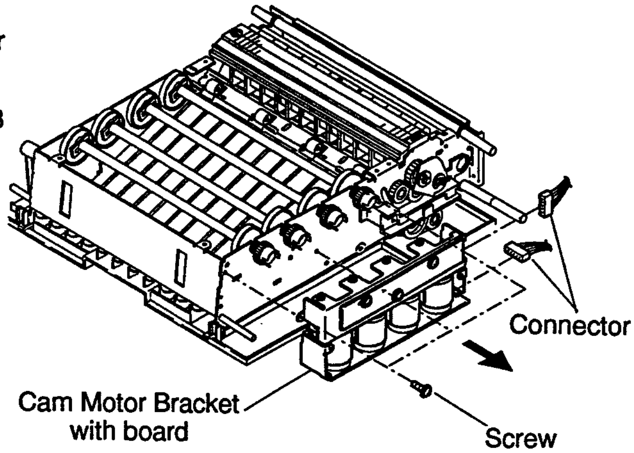
Paper Ejection Roller

1. Remove the 3 E-rings and 2 bushings.
2. Remove the paper ejection roller.

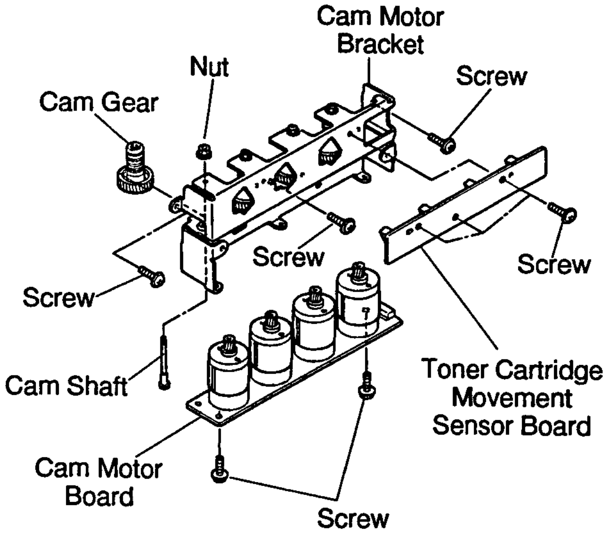

E-ring
Paper Ejection Roller
Bushing
E-ring
Bushing
Gear
E-ring

5.10.3 Cam Motor Board, Toner Cartridge Movement Sensor Board and Developer Selector Cam

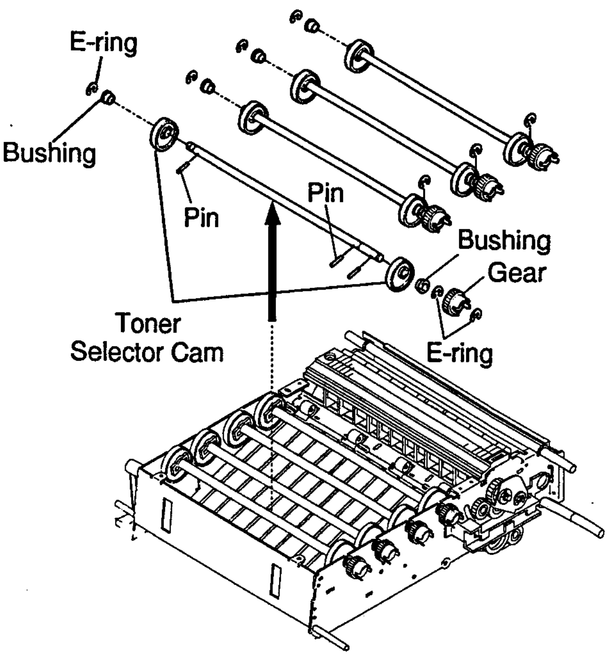
1. Remove the motor side cover, solenoid side cover and unit inner cover (see section 5.10.2.1).
2. Disconnect the 2 connectors, then remove the 3 screws from cam motor bracket.
3. Remove the cam motor bracket with the boards.


Connector
Cam Motor Bracket with board
Screw

4. Remove the 10 screws from the bracket and cam motor board.
5. Remove the cam motor board.
6. Remove the nut from the cam shaft, then pull out the cam shaft.
7. Remove the cam gear.
8. Remove the toner cartridge movement sensor board (3 screws).

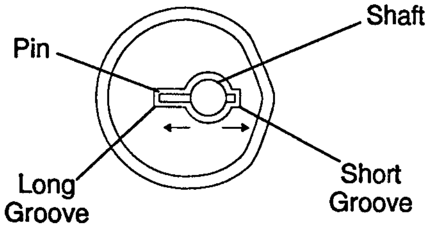

Cam Motor Bracket
Nut
Screw
Cam Gear
Screw
Screw
Screw
Cam Shaft
Toner Cartridge Movement Sensor Board
Cam Motor Board
Screw

9. Remove the 3 E-rings, gear and 2 bushings.
   The toner selector cam and toner selector shaft can now be removed.


E-ring
Bushing
Pin
Pin
Bushing
Gear
Toner Selector Cam
E-ring

Note :

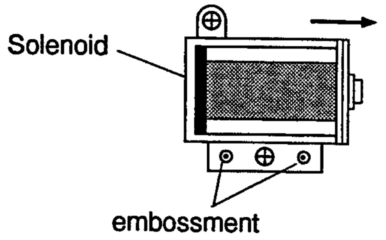
When reinstalling the toner selector cam and toner selector cam gear, make sure that the direction of the pin grooves for the cam and gears are the same.


Pin
Shaft
Long Groove
Short Groove

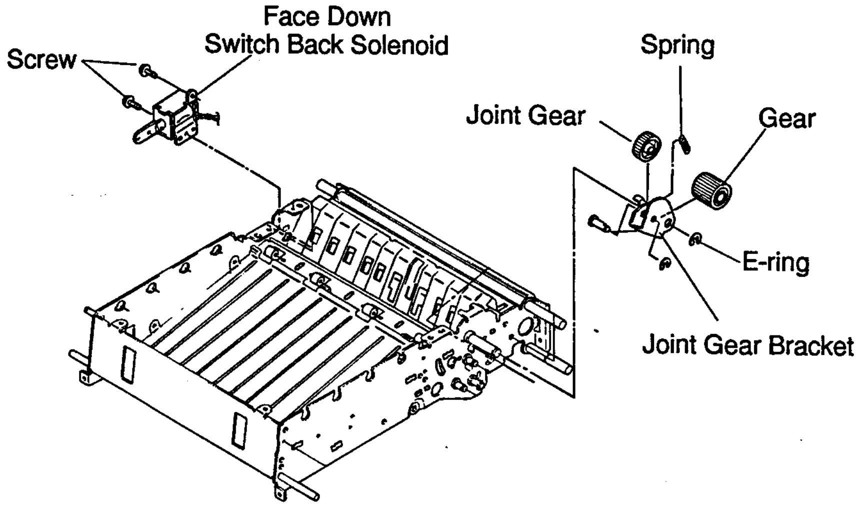
5.10.4 Joint Gear and Face Down Switch Back Solenoid

Note :

When reinstalling the solenoid, fit the 2 holes of the solenoid to the positioning embossments, then tighten the screws while pressing the solenoid to the arrow direction. This allows minimum stroke of the solenoid plunger.

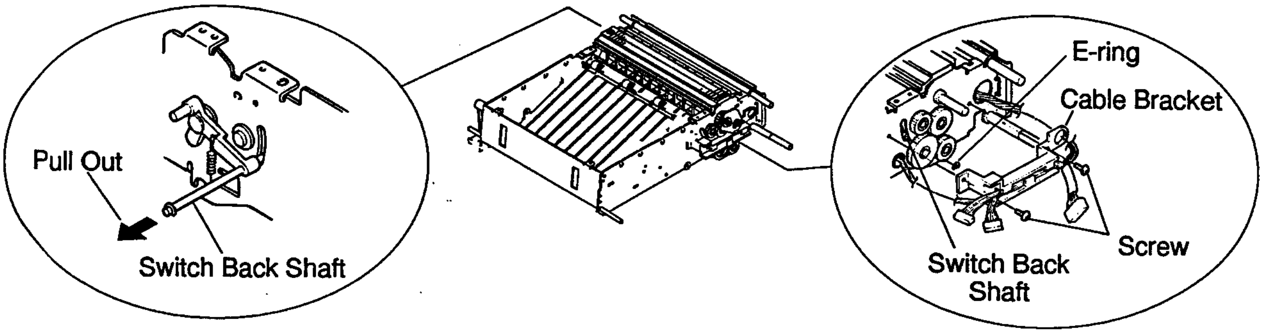

Solenoid
embossment

1. Remove the motor side cover, solenoid side cover and unit inner cover (see section 5.10.2.1).
2. Remove the E-ring and spring.
3. Remove the joint gear.
4. Remove the 2 screws and face down switch back solenoid.
5. Disconnect the connector on the paper ejection sensor board.

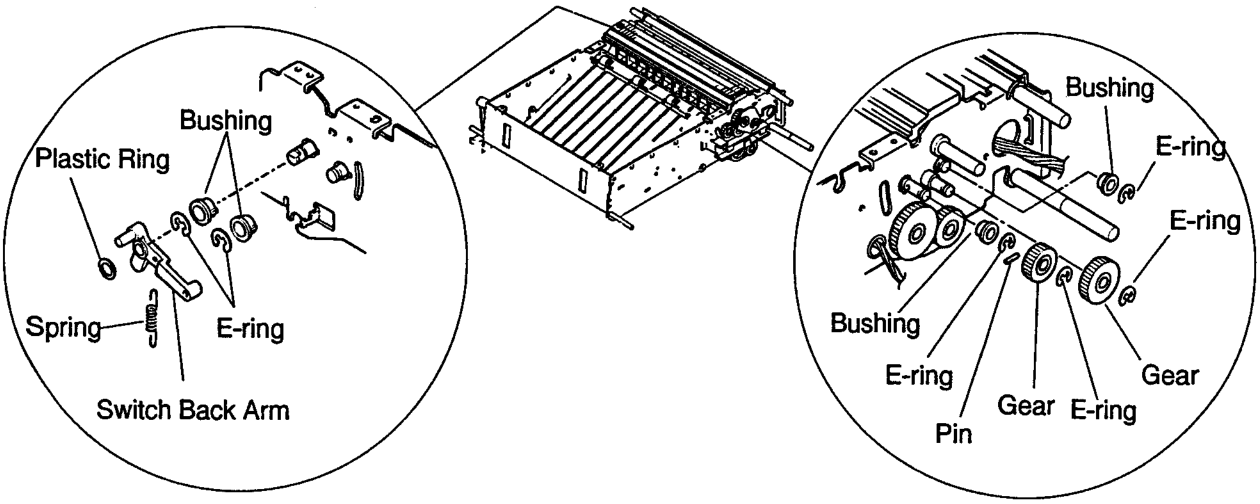

Face Down
Switch Back Solenoid
Screw
Spring
Joint Gear
Gear
E-ring
Joint Gear Bracket

5.10.5 Switch Back Shaft, Switch Back Roller and Face Down Switch Gate

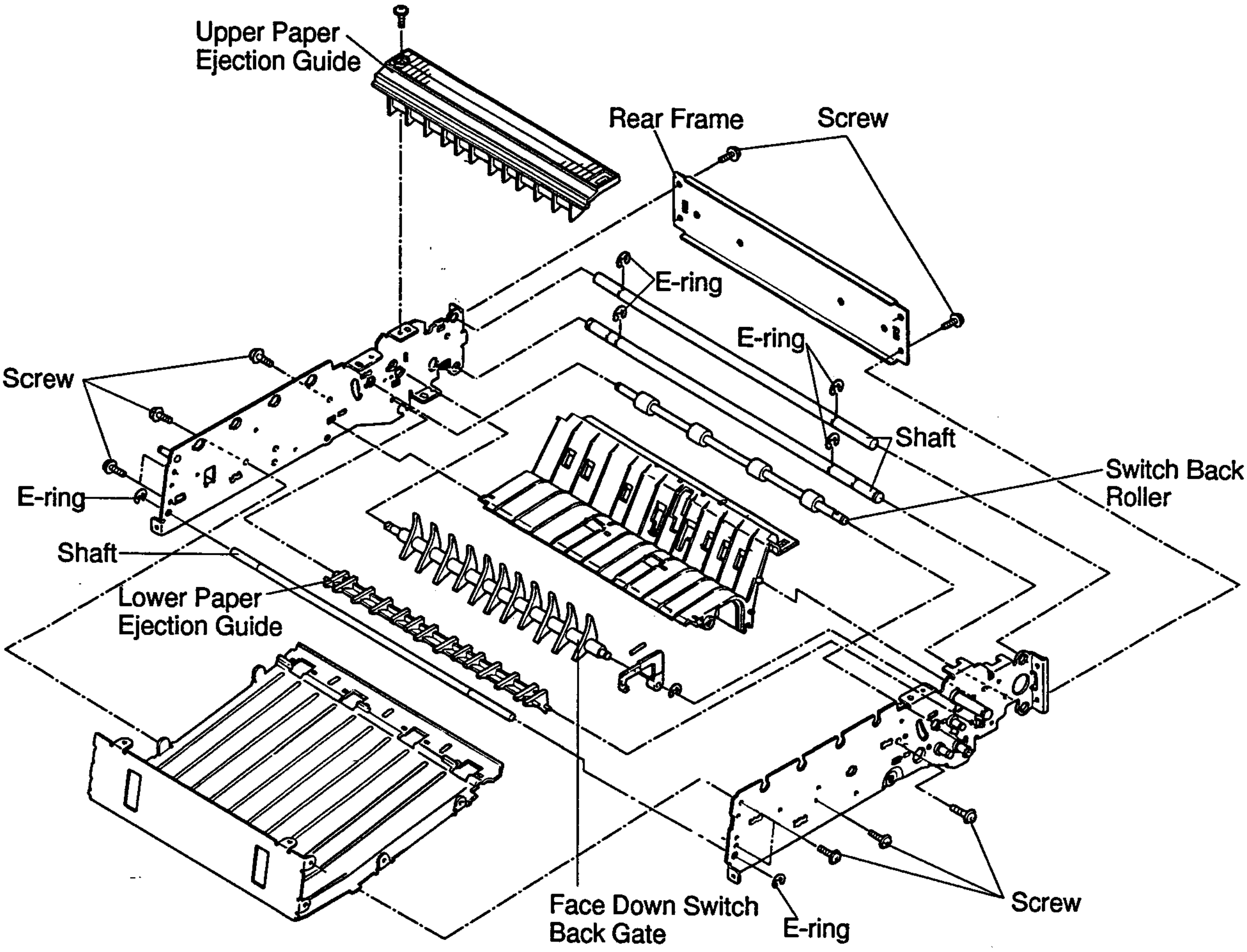
1. Remove the motor side cover, solenoid side cover and unit inner cover (see section 5.10.2.1).
2. Remove the paper ejection roller (see section 5.10.2.2).
3. Remove the cam motor bracket with board and developer selector cam (see section 5.10.3).
4. Remove the cable bracket (2 screws).
5. Remove the E-ring from the switch back shaft.
6. Pull out the switch back shaft.


Pull Out
Switch Back Shaft
E-ring
Cable Bracket
Screw
Switch Back Shaft

7. Remove the joint gear and face down switch back solenoid (see section 5.10.4).
8. Remove the spring, plastic ring and switch back arm.
9. Remove the 2 E-ring, pin and 2 gears from the right side chassis frame.
10. Remove the 2 E-rings and 2 bushings from the left side chassis frame.

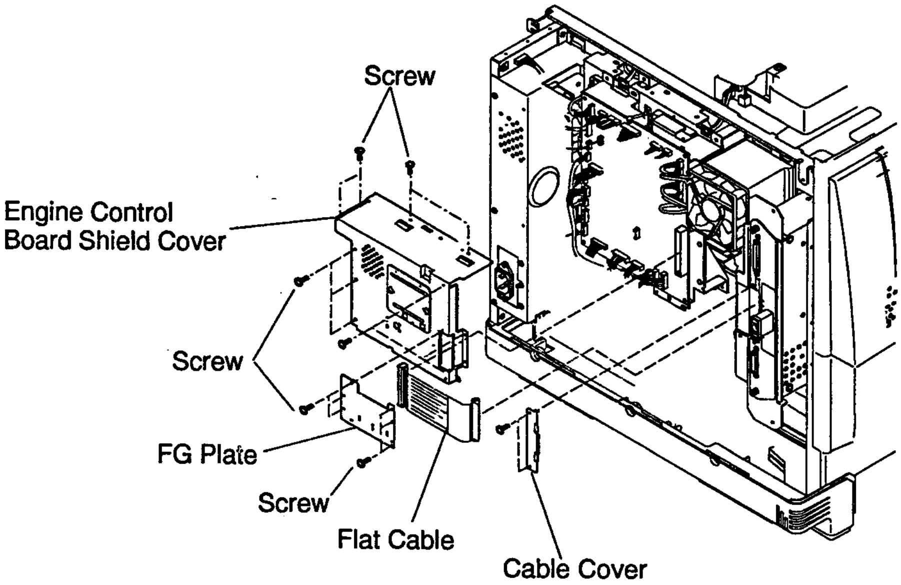

Bushing
Plastic Ring
Spring
E-ring
Switch Back Arm
Bushing
E-ring
E-ring
Bushing
E-ring
Pin
Gear
E-ring
Gear

11. Remove the paper ejection guide (1 screw).
12. Remove the rear frame (2 screws).
13. Remove the 9 screws and 2 E-rings.
14. Pull out the 4 shaft.
15. The switch back roller, face down switch back gate, all chassis frames, etc can now be separated.


Upper Paper Ejection Guide
Rear Frame
Screw
E-ring
E-ring
Screw
Shaft
Switch Back Roller
E-ring
Shaft
Lower Paper Ejection Guide
Face Down Switch Back Gate
E-ring
Screw

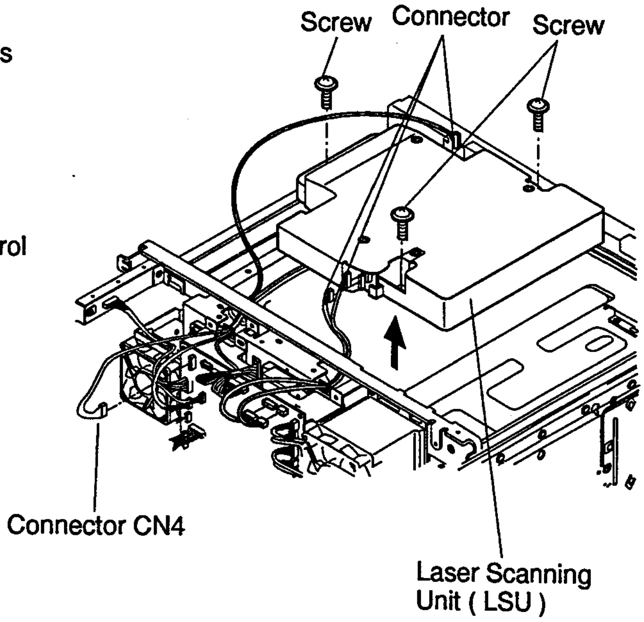
5.11 Engine Control Board Shield Cover

1. Remove the upper rear cover and top cover. (see section 5.1)
2. Remove the flat cable cover (2 screws).
3. Remove the FG plate (6 screws).
4. Remove the flat cable by disconneting the cable connectors.
5. Remove 12 screws and the engine control board shield cover.


Screw
Engine Control Board Shield Cover
Screw
FG Plate
Screw
Flat Cable
Cable Cover

5.12 Laser Scanning Unit (LSU)

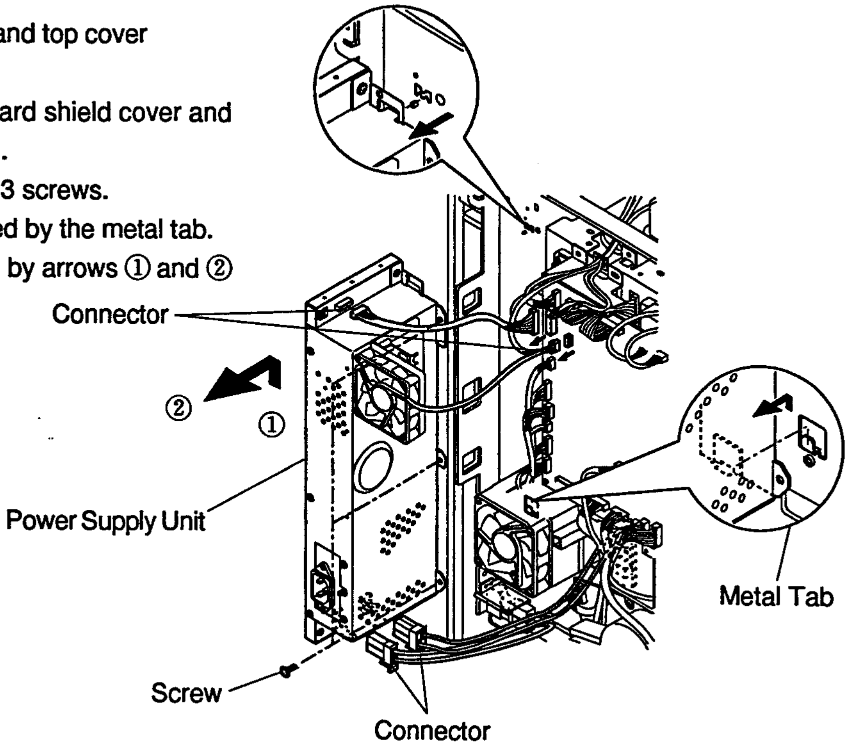
1. Remove the upper rear, lower rear and top covers (see section 5.1).
2. Remove the engine control board shield cover (see section 5.8).
3. Disconnect the 3 connectors from the LSU.
4. Disconnect the connector CN4 on the engine control board.
5. Remove the LSU (3 screws).


Screw
Connector
Screw
Connector CN4
Laser Scanning Unit (LSU)

5.13 Power Supply Unit

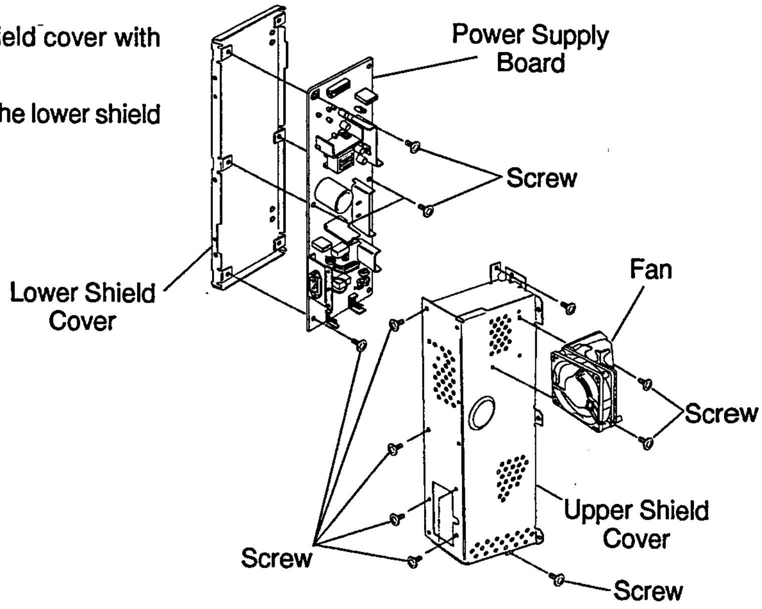
5.13.1 Power Supply Unit Removal

1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover and cable cover (see section 5.11).
3. Remove the 4 connectors and 3 screws.
4. The power supply unit is latched by the metal tab. Lift the power supply as shown by arrows ① and ② and remove.


Connector
②
①
Power Supply Unit
Metal Tab
Screw
Connector

5.13.2 Power Supply Unit Sub Assembly

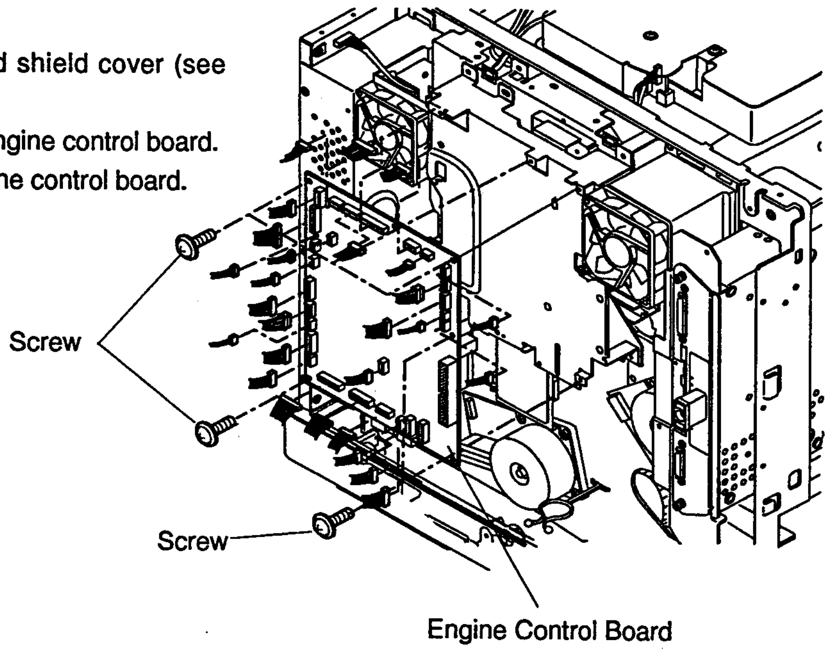
1. Remove the 7 screws and upper shield cover with fan.
2. Remove the 4 screws, then separate the lower shield plate from the power supply board.


Power Supply Board
Screw
Fan
Lower Shield Cover
Screw
Upper Shield Cover
Screw
Screw

5.14 Engine Control Board

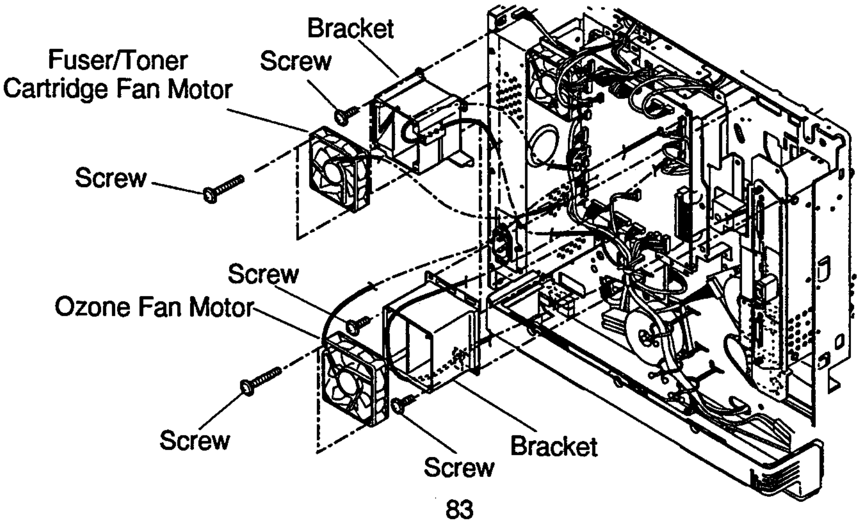
When replacing the engine control board, the top and the left calibration adjustment are needed. Refer to Section 8.

1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover (see section 5.11).
3. Disconnect all connectors on the engine control board.
4. Remove the 6 screws and the engine control board.


Screw
Screw
Engine Control Board

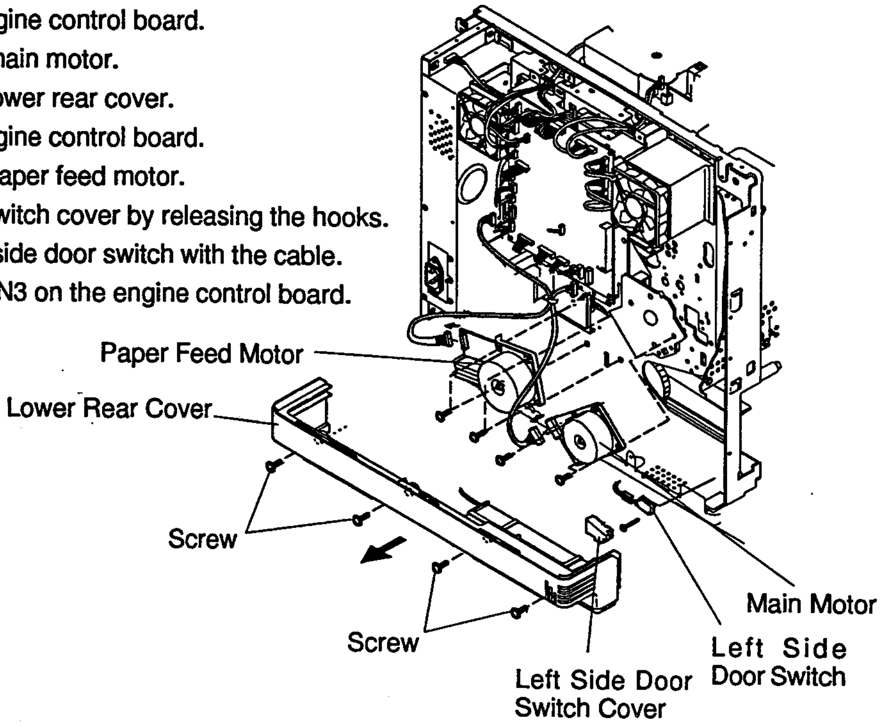
5.15 Fuser/Toner Cartridge Fan Motor and Ozone Fan Motor

1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover (see section 5.11).
3. Disconnect CN24 on the engine control board.
4. Remove the 2 screws and developer fan motor.
5. Disconnect CN23 on the engine control board, and open the clamper.
6. Remove the 3 screws from the fuser/toner cartridge fan motor bracket.
7. Remove the fuser/toner cartridge fan motor bracket while releasing the cables from the bracket.
8. Disconnect CN9 and CN12 on the engine control board.
9. Remove the 2 screws and the ozone fan motor.
10. Remove the 2 screws from the ozone fan motor bracket.
11. Remove the ozone fan motor bracket while releasing the cables from the bracket.


Bracket
Fuser/Toner Cartridge Fan Motor
Screw
Screw
Screw
Ozone Fan Motor
Screw
Bracket
Screw

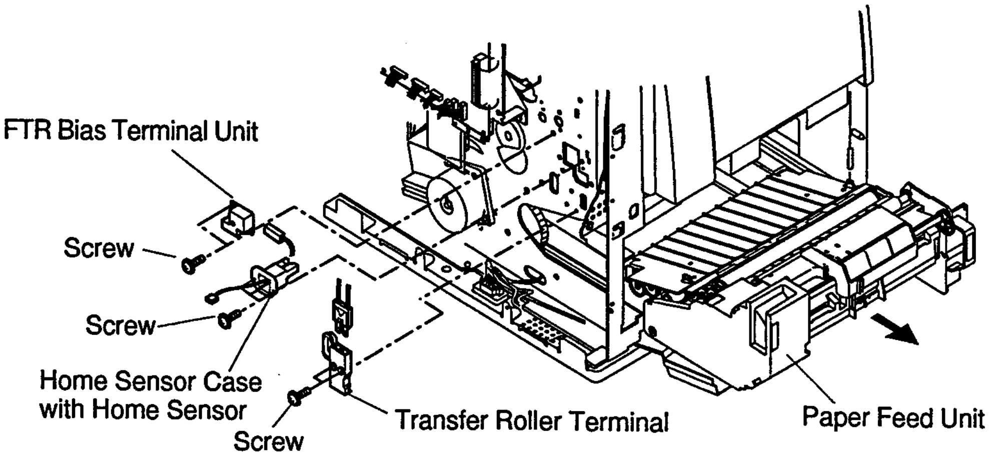
5.16 Main Motor, Paper Feed Motor and Left Side Door Switch

1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover (see section 5.11).
3. Disconnect CN16 on the engine control board.
4. Remove the 4 screws and main motor.
5. Remove the 4 screws and lower rear cover.
6. Disconnect CN22 on the engine control board.
7. Remove the 4 screws and paper feed motor.
8. Remove the left side door switch cover by releasing the hooks.
9. Remove the screw and left side door switch with the cable.
10. Disconnect the connector CN3 on the engine control board.


Paper Feed Motor
Lower Rear Cover
Screw
Screw
Main Motor
Left Side Door Switch
Left Side Door Switch Cover

5.17 Transfer Roller Bias Terminal, FTR Bias Terminal, Home Sensor Board and Fuser Joint Connector

1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover (see section 5.11).
3. Remove the 2 screws and FTR bias terminal unit.
4. Disconnect the cable from the FTR bias terminal.
5. Slide out the paper feed unit.
6. Disconnect the cable from the transfer roller bias terminal.
7. Remove the 2 screws.
   The transfer roller bias terminal is disassembled and removed from the chassis frame.
8. Disconnect CN13 on the engine control board.
9. Remove the 2 screws and home sensor case with home sensor board.

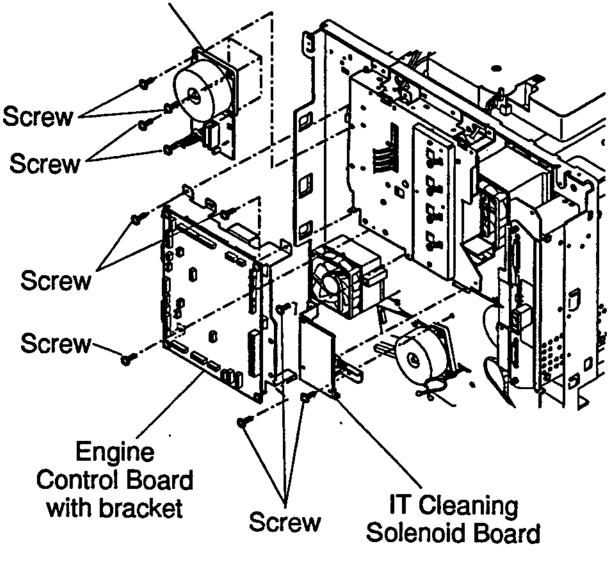

FTR Bias Terminal Unit
Screw
Screw
Home Sensor Case with Home Sensor
Screw
Transfer Roller Terminal
Paper Feed Unit

5.18 IT Cleaning Solenoid Board and Toner Cartridge Drive Motor/Toner Cartridge Drive Unit

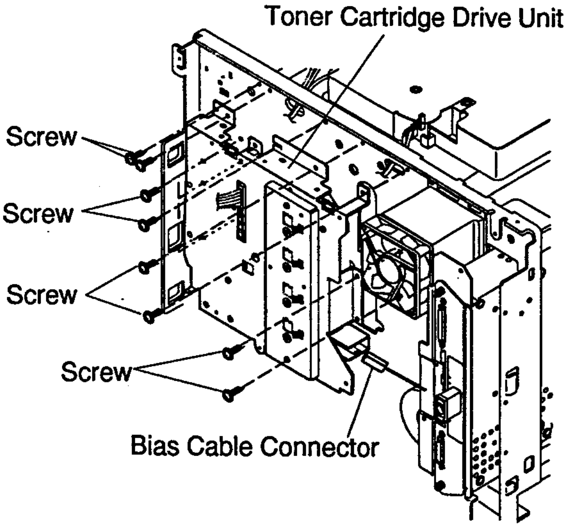
5.18.1 Removal (IT Cleaning Solenoid Board and Toner Cartridge Drive Motor/Toner Cartridge Drive Unit)

1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover (see section 5.11).
3. Remove the power supply unit (see section 5.13.1).
4. Disconnect all connectors on the engine control board and release the clampers, clamping the cables.
5. Remove the engine control board with the bracket (4 screws).
6. Remove the 2 screws and IT cleaning solenoid board with the bracket.
7. Remove the 4 screws and toner cartridge drive
8. motor.
9. Disconnect the connector from the developer bias terminal.

   Remove the 10 screws and toner cartridge drive unit.

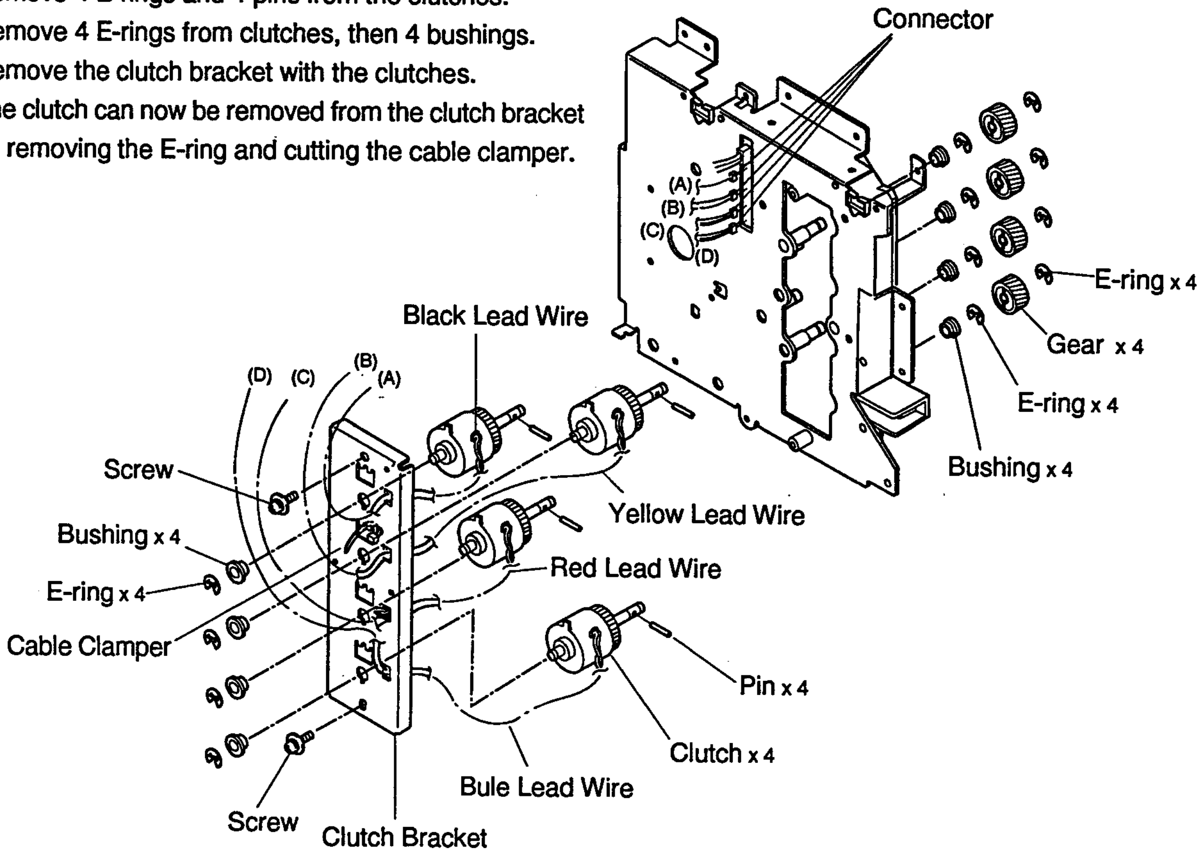

Toner Cartridge Drive Motor
Screw
Screw
Screw
Screw
Engine Control Board with bracket
Screw
IT Cleaning Solenoid Board

8. Disconnect the connector from the developer bias terminal.
9. Remove the 10 screws and toner cartridge drive unit.

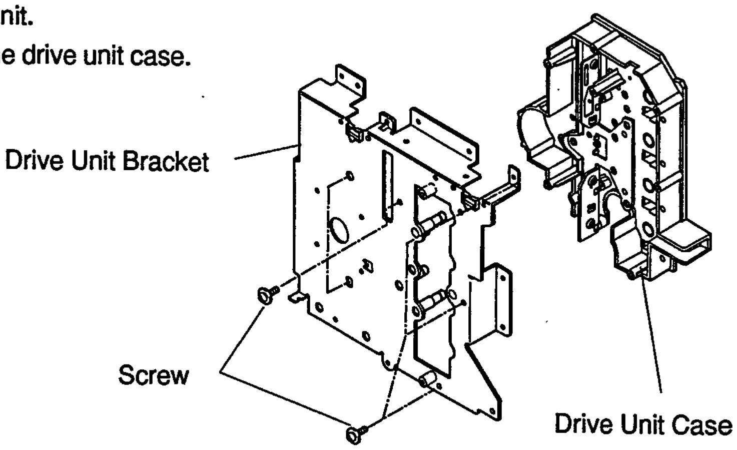

Toner Cartridge Drive Unit
Screw
Screw
Screw
Screw
Bias Cable Connector

5.18.2 Toner Cartridge Drive Unit Sub Assembly

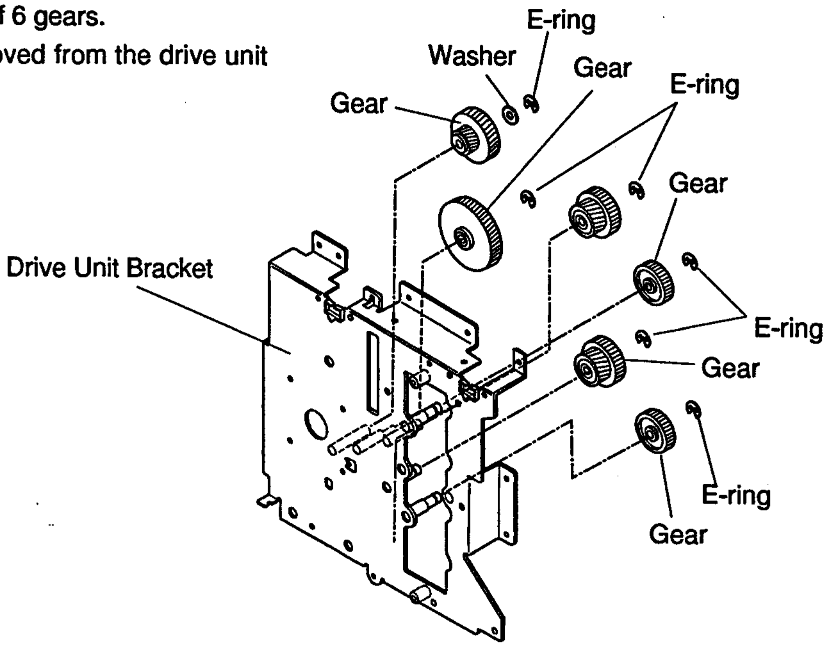
1. Disconnect the 4 connectors.
2. Remove 4 E-rings and 4 pins from the clutches.
3. Remove 4 E-rings from clutches, then 4 bushings.
4. Remove the clutch bracket with the clutches.
5. The clutch can now be removed from the clutch bracket by removing the E-ring and cutting the cable clamper.


Connector
(A)
(B)
(C)
(D)
E-ring x 4
Gear x 4
E-ring x 4
Bushing x 4
Black Lead Wire
(D) (C) (B) (A)
Screw
Bushing x 4
E-ring x 4
Cable Clamper
Yellow Lead Wire
Red Lead Wire
Pin x 4
Clutch x 4
Bule Lead Wire
Screw
Clutch Bracket

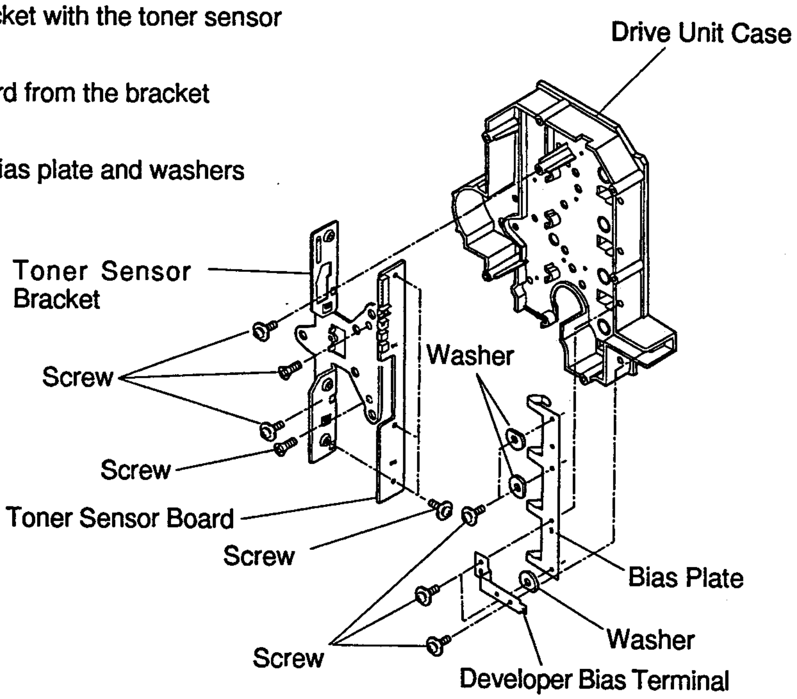
6. Remove the 6 screws from the drive unit.
7. Separate the drive unit bracket from the drive unit case.


Drive Unit Bracket
Screw
Drive Unit Case

8. Remove the E-ring from each of 6 gears.
9. Each of gear can now be removed from the drive unit bracket.

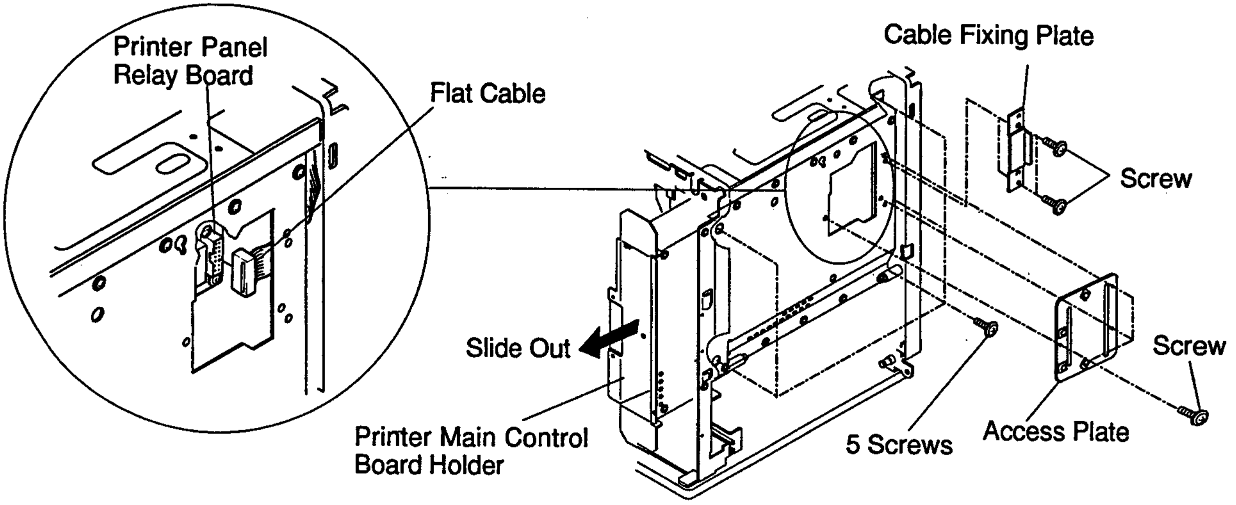

E-ring
Washer
Gear
E-ring
Gear
Gear
Drive Unit Bracket
E-ring
Gear
E-ring
Gear

10. Remove the toner sensor bracket with the toner sensor board (4 screws).
11. Remove the toner sensor board from the bracket (3 screws).
12. Remove the developer bias, bias plate and washers (4 screws).

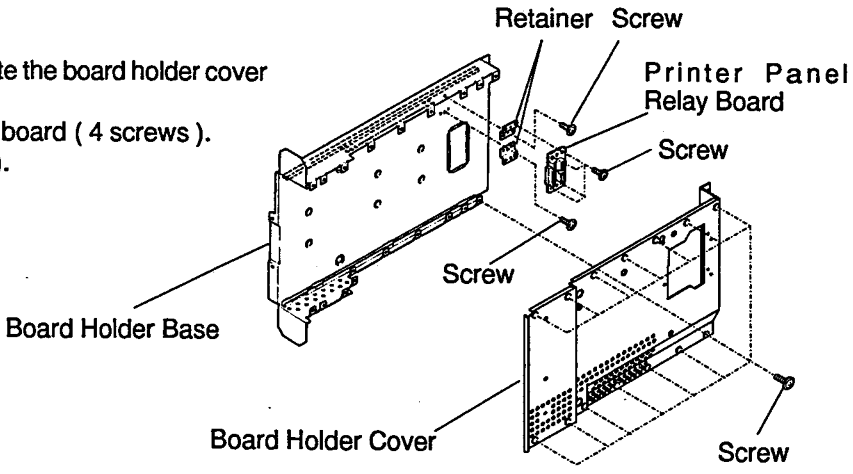

Drive Unit Case
Toner Sensor Bracket
Screw
Washer
Screw
Toner Sensor Board
Screw
Bias Plate
Washer
Screw
Developer Bias Terminal

5.19 Printer Main Control Board Holder, Printer Panel Relay Board and High Voltage Board

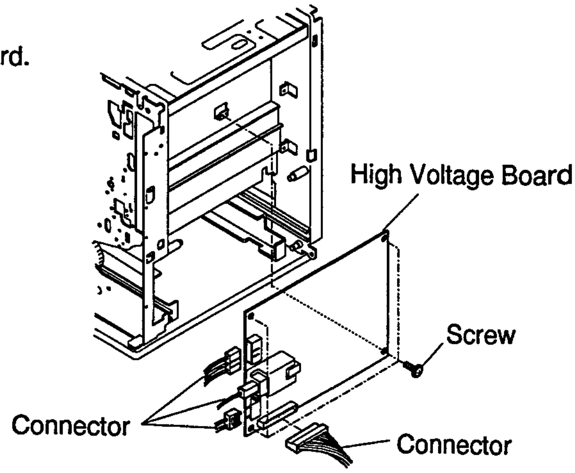
1. Remove the upper rear cover and top cover (see section 5.1).
2. Remove the engine control board shield cover (see section 5.11).
3. Open the left side door, then slide out the paper feed unit.
4. Remove the left side cover and multi-purpose tray (see section 5.2).
5. Remove the main control board (see section 5.8.1).
6. Remove the access plate from the printer main control board holder (3 screws).
7. Remove the cable fixing plate (2 screws).
8. Disconnect the flat cable from the printer panel relay board.
9. Remove the 5 screws, then slide out the printer main control board holder from the printer.


Printer Panel
Relay Board
Flat Cable
Cable Fixing Plate
Screw
Screw
Slide Out
Printer Main Control
Board Holder
5 Screws
Access Plate

10. Remove 15 screws, then separate the board holder cover from the board holder base.
11. Remove the printer panel relay board (4 screws).
12. Remove the retainer (1 screw).


Retainer
Screw
Printer Panel
Relay Board
Screw
Screw
Board Holder Base
Board Holder Cover
Screw

13. Disconnect the 4 connectors on the high voltage board.
14. Remove the 4 screws and high voltage board.


High Voltage Board
Screw
Connector
Connector

5.20 IT Belt Cleaning Drive Gears, Cleaning Clutch Shaft Assembly, Main Motor Bracket, Imaging Unit Coupling Connector, Fuser Coupling Connetor and Optional 2nd Feeder Coupling Connector

When removing the fuser coupling and optional 2nd feeder coupling connetors, remove the follwing parts.

upper rear cover and top cover (see section 5.1)
engine control board shield cover and cable cover (see section 5.11)

A. Fuser Coupling Connector

1. Disconnect the connector CN204 on the power supply unit connector CN25 on the engine control board.
2. Remove the imaging unit coupling connectrors (3 screws).

B. Optional 2nd Feeder Coupling Connector

1. Disconnect the connector CN19 on the engine control board.
2. Remove the imaging unit coupling connectrors (2 screws).

When removing the imaging unit coupling connector, IT belt Cleaning drive gears, cleaning clutch shaft assembly and main motor bracket, further remove the followqing parts.

engine control board with bracket and toner cartridge drive unit (see section 5.18.1)

C. Imaging Unit Coupling Connector

1. Remove the imaging unit coupling connectors (3 screws).
2. Remove the coupling connector from the bracket (2 screws).

D. IT Belt Claening Drive Gears

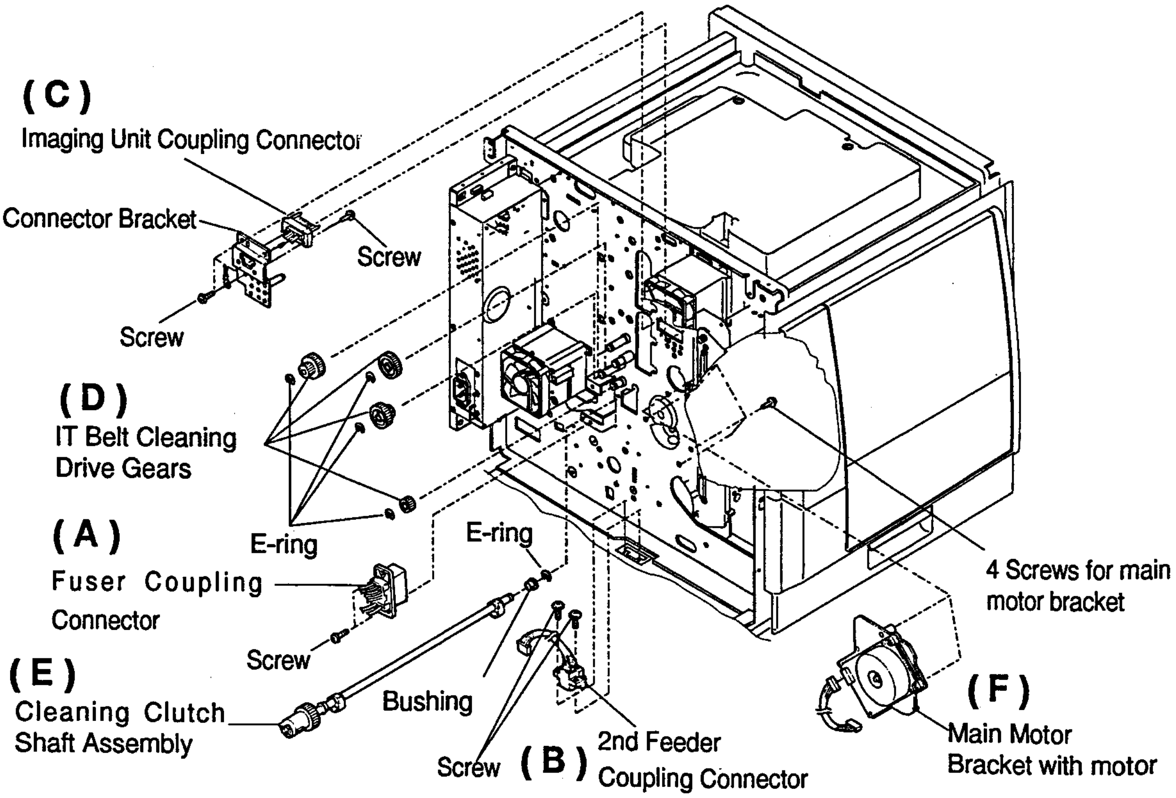
Remove the E-ring from each of IT belt cleaning drive gears and gear.

E. Cleaning Clutch Shaft Assembly

1. Open the front cover.
2. Remove the E-ring and bushing from the cleaning clutch shaft assembly.
3. Remove the cleaning clutch shaft assembly from the printer.

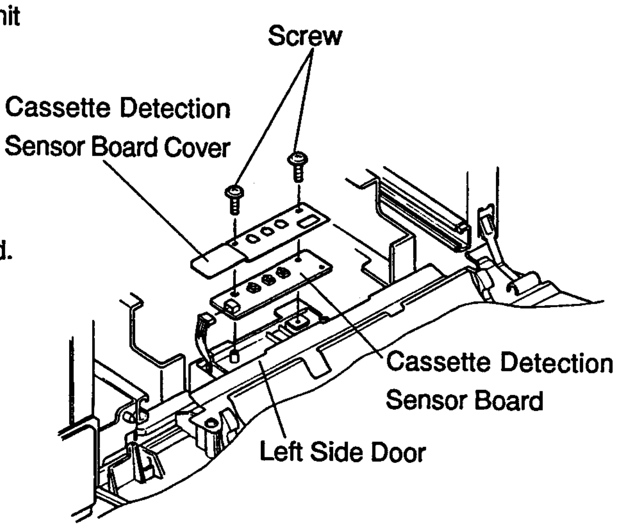
F. Main Motor Bracket

1. Open the front cover.
2. Remove the main main motor bracket with the motor (4 screws).


(C)
Imaging Unit Coupling Connector
Connector Bracket
Screw
Screw
(D)
IT Belt Cleaning Drive Gears
(A)
E-ring
E-ring
Fuser Coupling Connector
Screw
(E)
Cleaning Clutch Shaft Assembly
Bushing
Screw
(B)
2nd Feeder Coupling Connector
4 Screws for main motor bracket
(F)
Main Motor Bracket with motor

5.21 Cassette Detection Sensor Board

1. Open the left side door, then remove the paper feed unit (see section 5.9.1).
2. If necessary, remove the left side door (see section 5.7.1).
3. Remove the cassette detection sensor board cover (2 screws).
4. Disconnect the connector CN633 on the sensor board.
5. Remove the cassette detection sensor board.


Screw
Cassette Detection Sensor Board Cover
Cassette Detection Sensor Board
Left Side Door

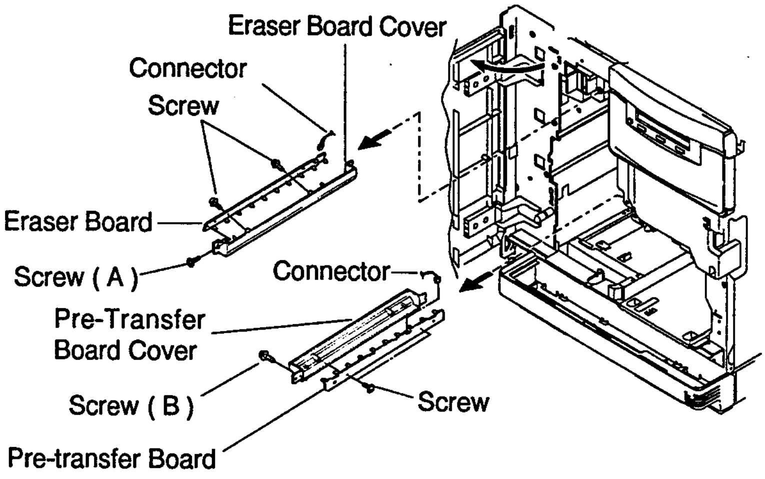
5.22 Pre-Exposure Eraser and Pre-Transfer Boards

Pre-Exposure Eraser Board

1. Open the front cover.
2. Remove the screw (A).
3. Disconnect the connector on the eraser board.
4. Remove the eraser board with eraser board cover.
5. Remove the 2 screws.
6. The eraser board can now be removed from the cover.

Pre-Transfer Board

1. Open the front cover.
2. Remove the screw (B).
3. Disconnect the connector on the pre-transfer board.
4. Remove the pre-transfer board with pre-transfer board cover.
5. Remove the 2 screws.
6. The pre-transfer board can now be removed from the cover.


Eraser Board Cover
Connector
Screw
Eraser Board
Screw (A)
Connector
Pre-Transfer Board Cover
Screw (B)
Screw
Pre-transfer Board

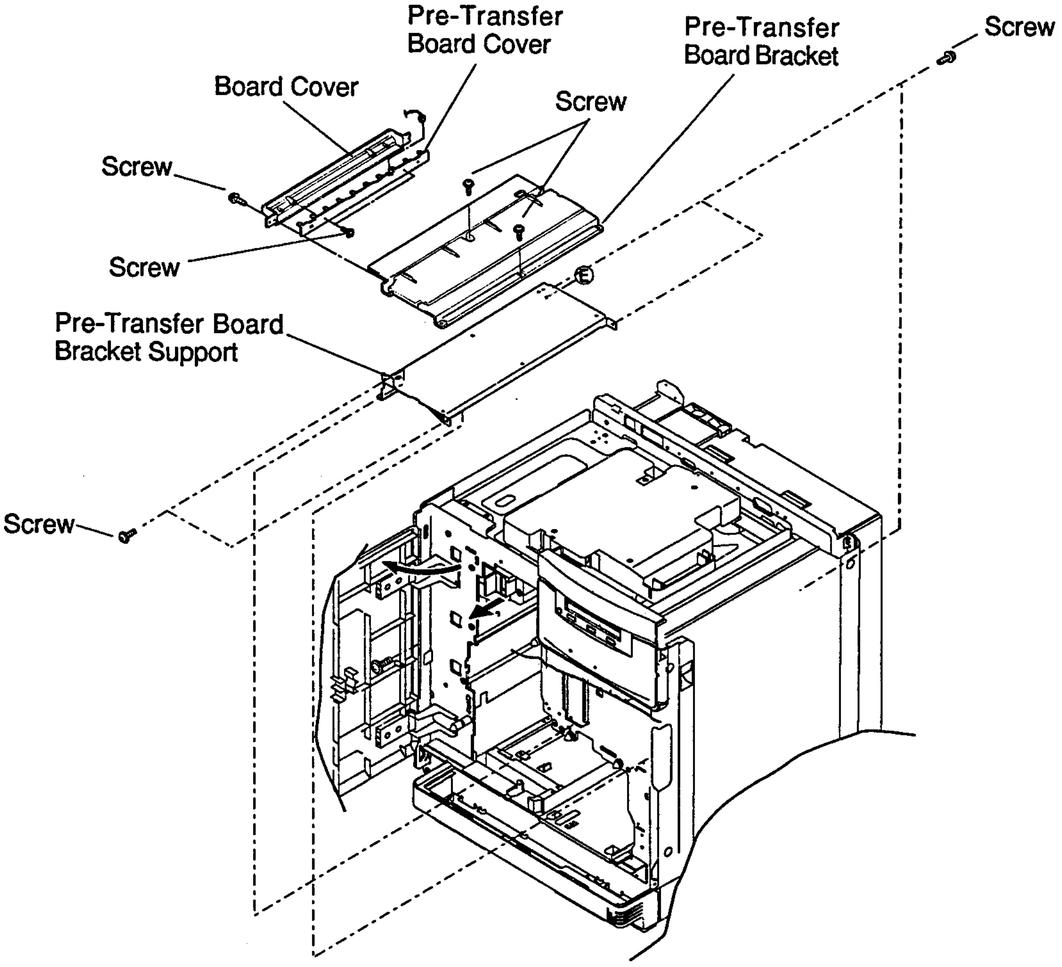
5.23 Pre-Transfer Board Bracket and Toner Cartridge Guide Rails

Remove the follwing parts.

a. Upper Rear and Top Covers : see section 5.1
b. Engine Control Board Shield Cover and Cable Cover : see section 5.11
c. Engine Control Board with Bracket and IT Cleaning Solenoid Board : see section 5.18.1
d. Power Supply Unit : see section 5.13.1

5.23.1 Pre-Transfer Board Bracket

1. Open the toner cartridge selector/paper-eject unit and front cover.
2. Remove the 4 screws and pre-transfer board bracket support plate with the board bracket.
3. Remove the 2 screws, then separate the pre-transfer board bracket from the support plate.
4. Remove the 2 screws and pre-transfer board from the board cover.


Pre-Transfer Board Cover
Pre-Transfer Board Bracket
Screw
Board Cover
Screw
Screw
Screw
Pre-Transfer Board Bracket Support
Screw

5.23.2 Toner Cartridge Guide Rails

1. Remove the pre-transfer board bracket support plate with the board bracket.
2. Remove the 6 screws and upper rear cover side toner cartridge guide rail (see the figure B)
3. Remove the operation panel cover (see section 5.3).
4. Remove the toner empty sensor board (see section 5.4).
5. Remove the 7 screws and front cover side guide rail (see the figure A).

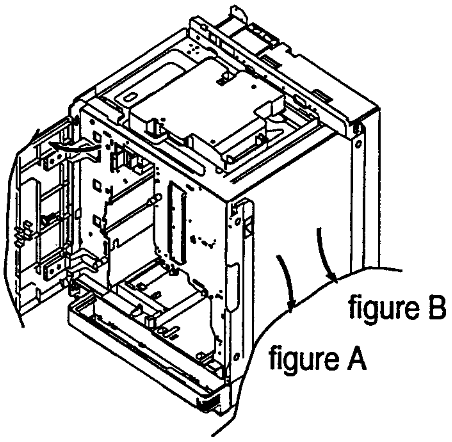
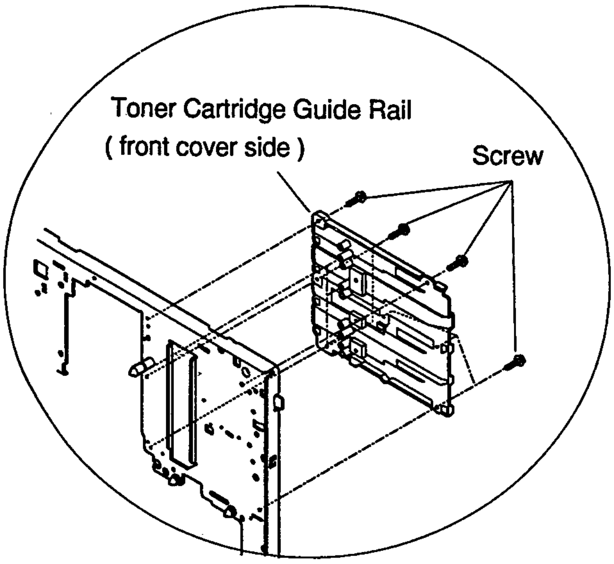
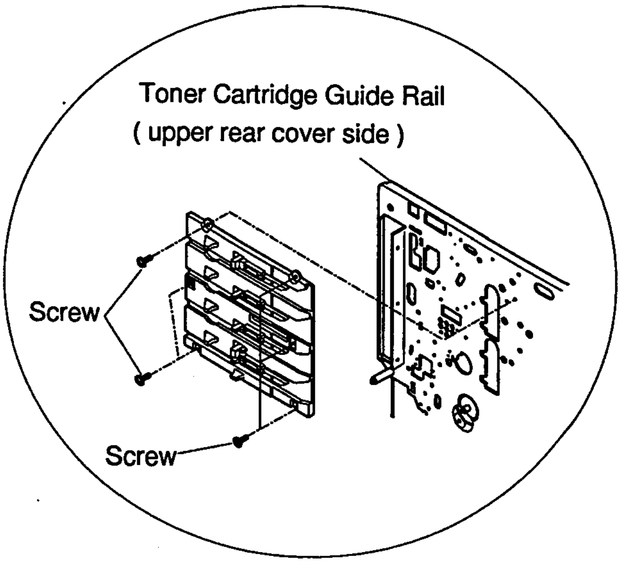


figure B
figure A

(figure A)

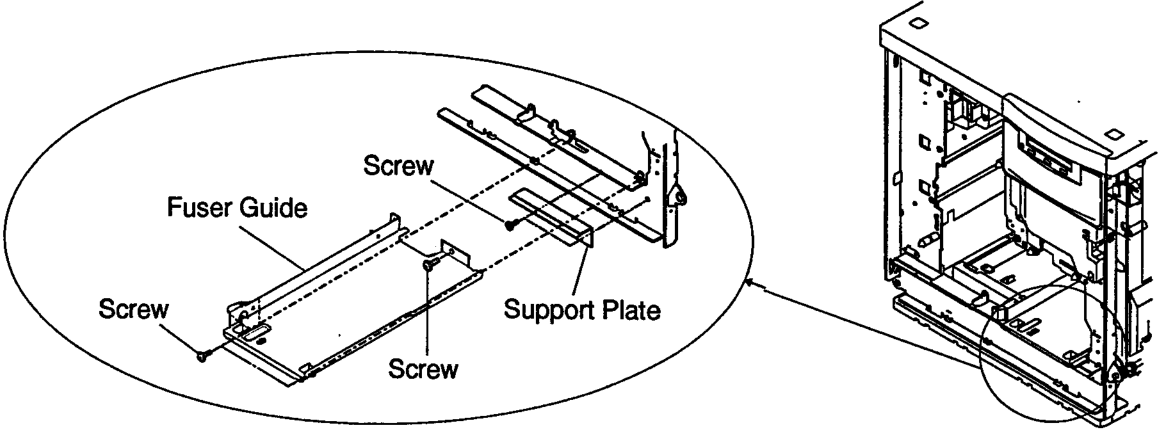

Toner Cartridge Guide Rail
(front cover side)
Screw

(figure B)

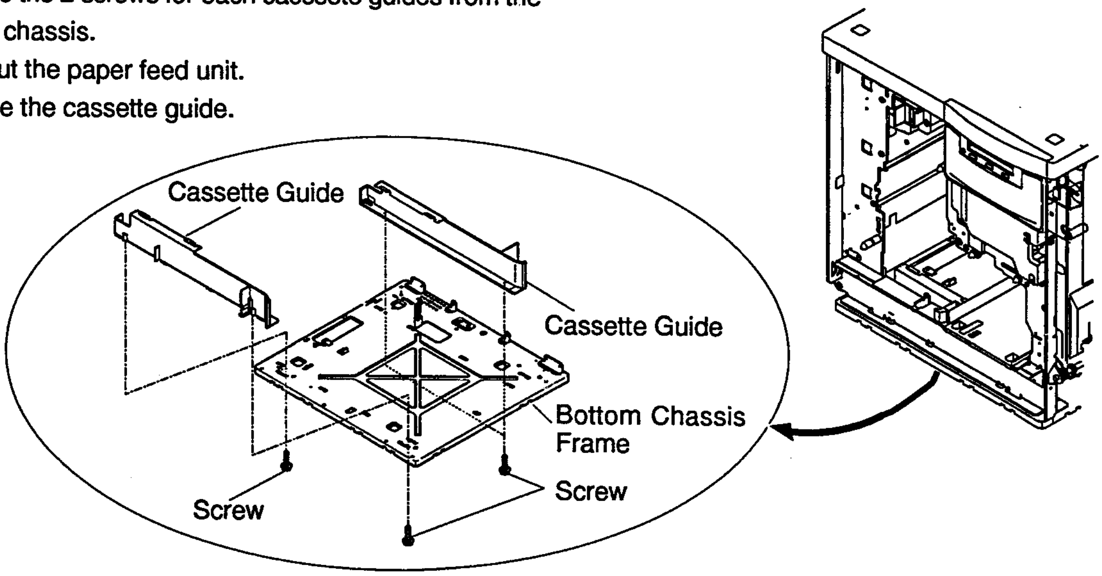

Toner Cartridge Guide Rail
(upper rear cover side)
Screw
Screw

5.24 Cassette Guide, Fuser Guide Frame and Fuser/Paper Feed Unit Drive Gears

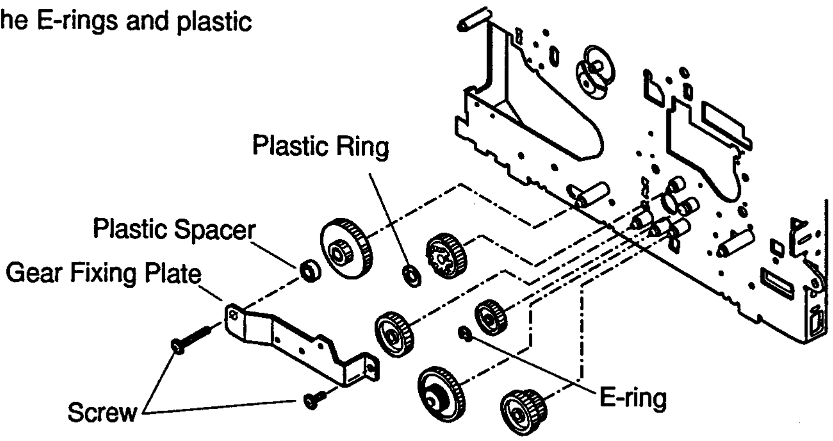
1. Open the front cover.
2. Remove the support plate (2 screws).
3. Remove the 3 screws and fuser guide plate.


Screw
Fuser Guide
Screw
Support Plate
Screw

4. Remove the 2 screws for each casssete guides from the bottom chassis.
5. Slide out the paper feed unit.
6. Remove the cassette guide.

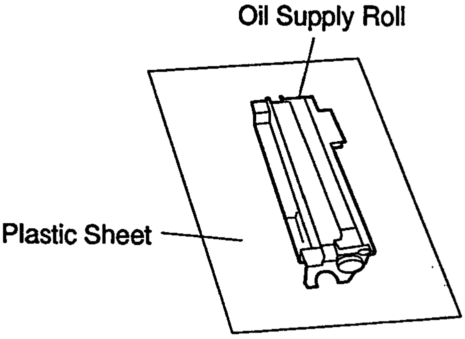

Cassette Guide
Cassette Guide
Bottom Chassis Frame
Screw
Screw

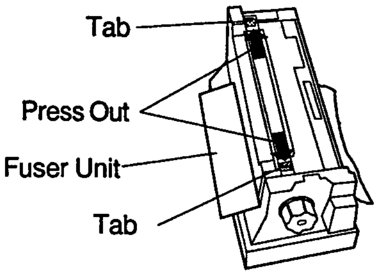
7. Remove the 2 screws and gear fixing plate.
8. All gears and plastic spacer can now be removed from the chassis frame by removing the E-rings and plastic ring.

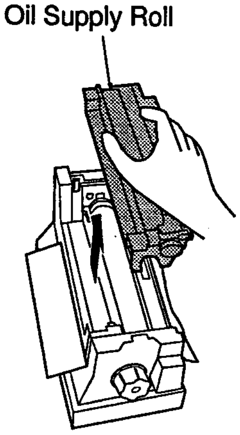

Plastic Ring
Plastic Spacer
Gear Fixing Plate
Screw
E-ring

5.25 Fuser Unit Component (Heat Lamp, Thermal Fuse and Thermostat)

1. Remove the oil supply roll out of the fuser unit after pressing out on tabs to unlock the oil supply roll.
2. Put the oil supply roll on the plastic sheet to prevent oil adhesion as shown below.

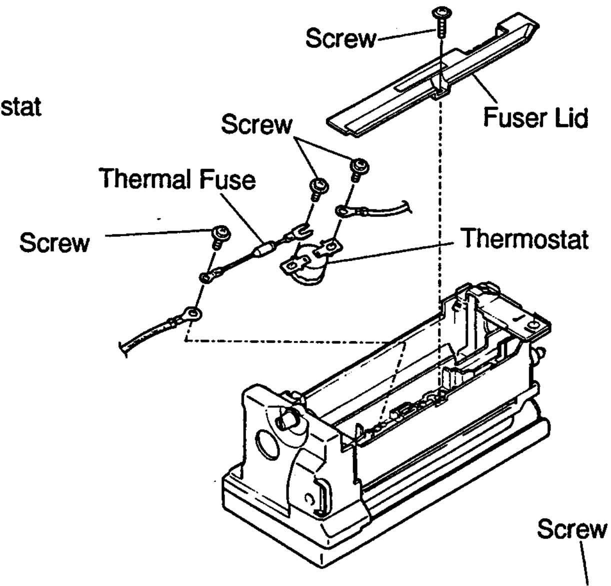

Oil Supply Roll
Plastic Sheet


Tab
Press Out
Fuser Unit
Tab


Oil Supply Roll

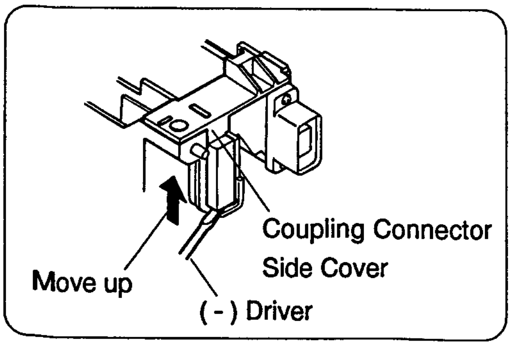
Thermal Fuse and Thermastat Removal

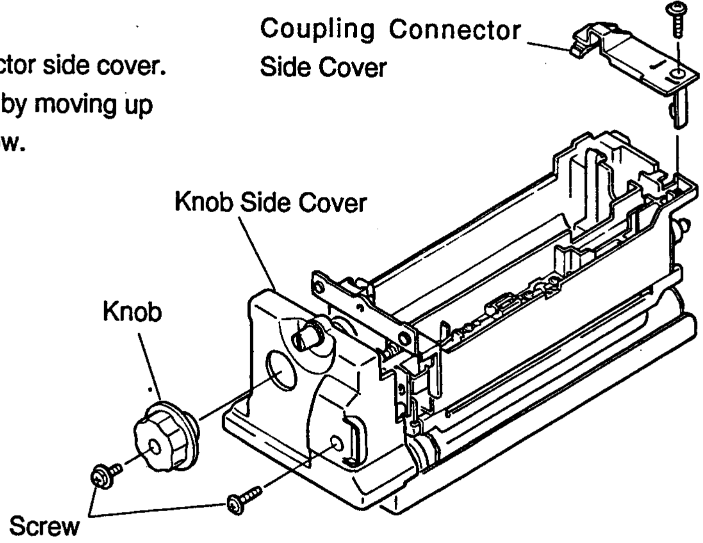
1. Remove the fuser lid (2 screws).
2. Remove the thermal fuse (2 screrws), then thermostat (1 screw).


Screw
Fuser Lid
Screw
Thermal Fuse
Screw
Thermostat

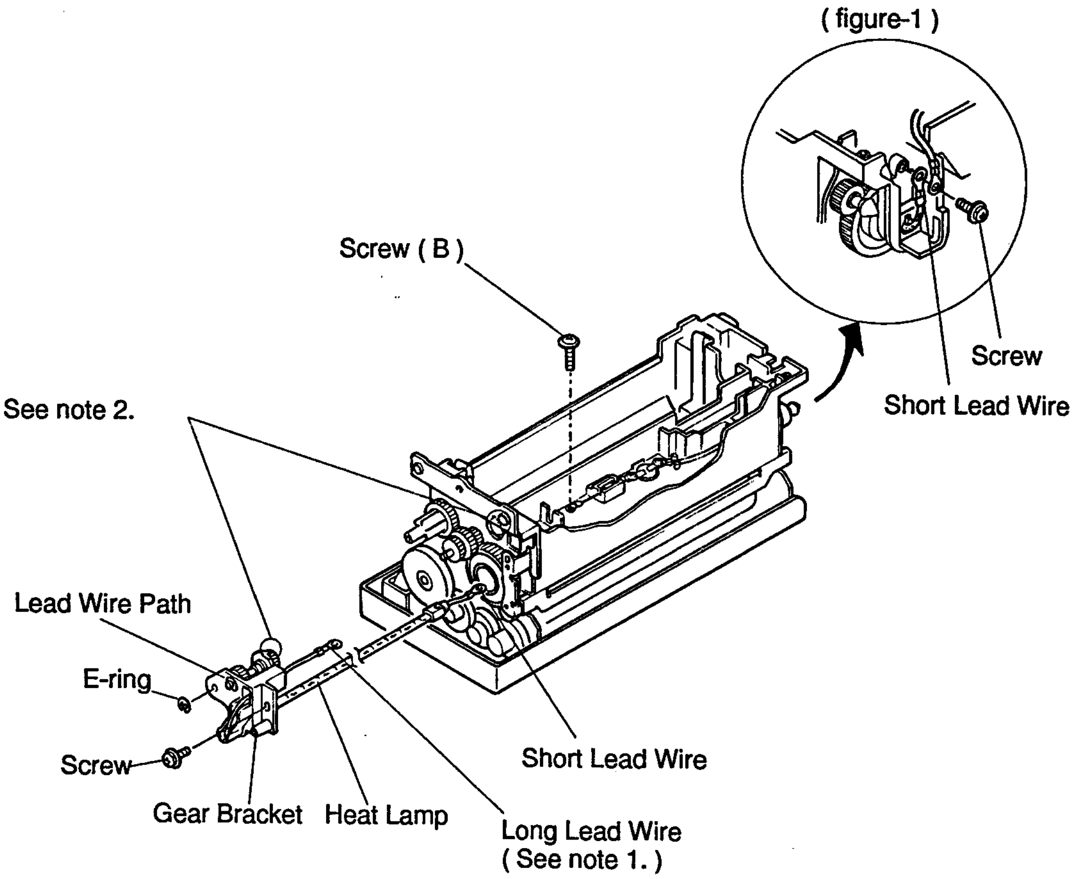
Heat Lamp Removal

1. Remove the knob side cover (2 screws).
2. Remove the screw from the coupling connector side cover.
3. Separate the coupling connector side cover by moving up the part (A) using (-) driver as shown below.


Coupling Connector Side Cover
Move up
(-) Driver


Screw
Coupling Connector Side Cover
Knob Side Cover
Knob
Screw

4. Remove the screw from the short lead wire (see the figure -1).
   If the screw (B) is tightened, remove it.
5. Remove the E-ring and screw.
6. Remove the heat lamp with the gear bracket.
7. Separate the heat lamp from the gear bracket by extracting the lead wire from the lead wire path.

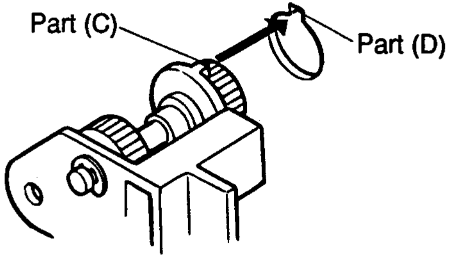

(figure-1)
Screw (B)
Screw
Short Lead Wire
See note 2.
Lead Wire Path
E-ring
Screw
Short Lead Wire
Gear Bracket
Heat Lamp
Long Lead Wire
(See note 1.)

Note 1 :

The long lead wire must be routed into the lead wire path on the gear bracket as shonw above.

Note 2 :

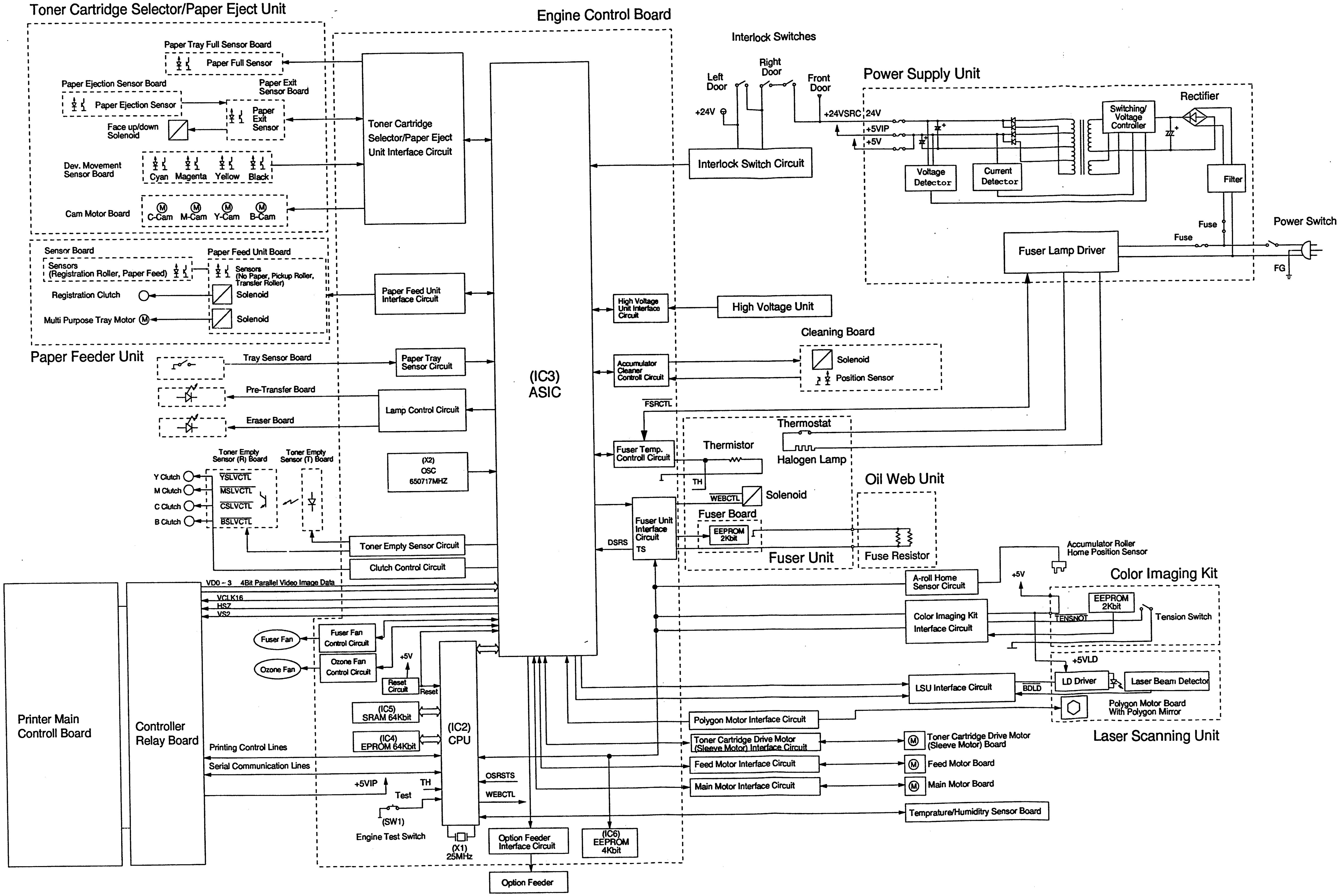
The part (C) must be alinged with the part (D) on the chassis frame as shown below.


Part (C)
Part (D)

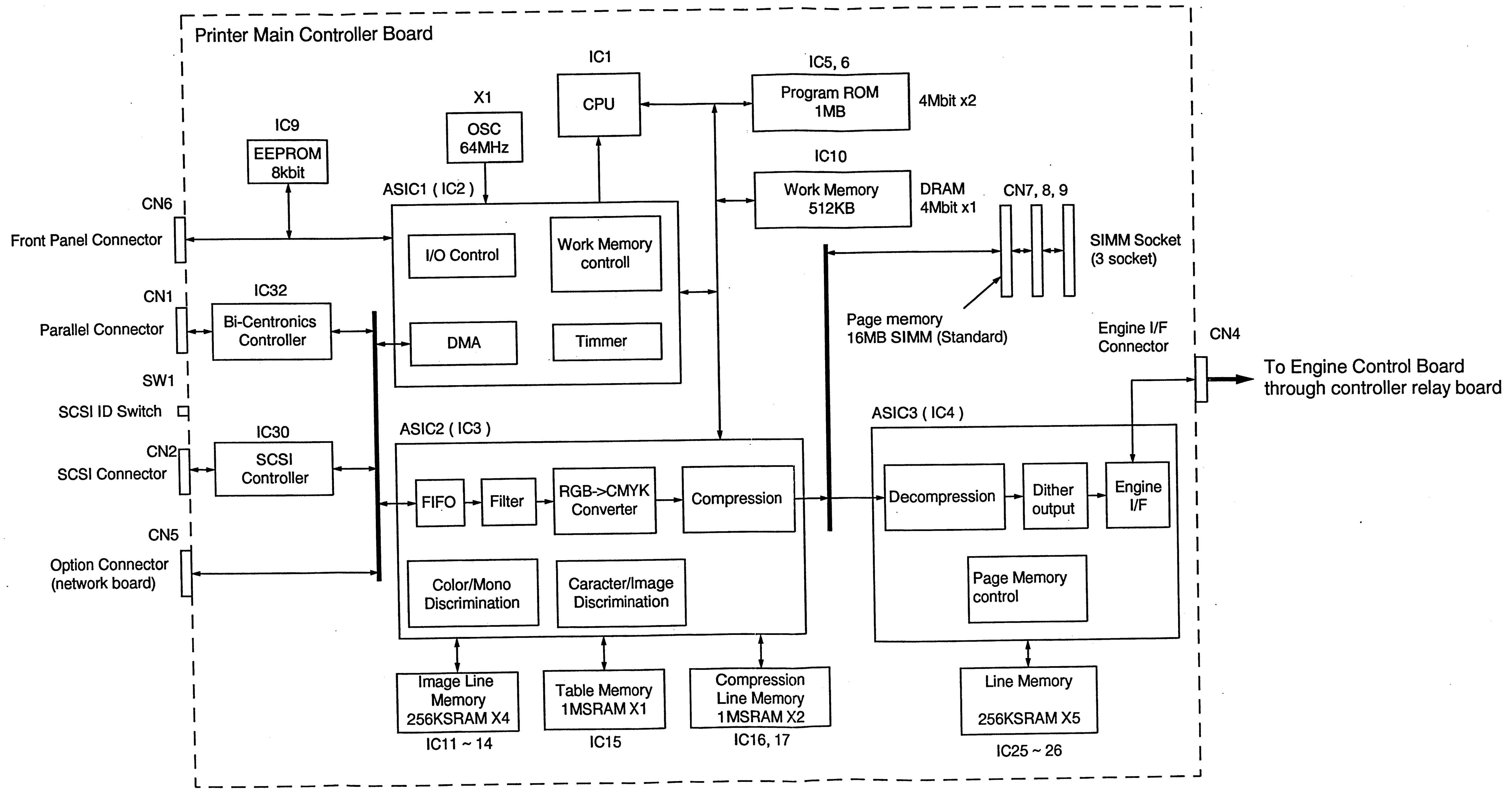
- BLANK SIDE -

6. Electrical Circuit Description

6.1 Engine Block Diagram


Toner Cartridge Selector/Paper Eject Unit
Engine Control Board
Paper Tray Full Sensor Board
Paper Full Sensor
Paper Ejection Sensor Board
Paper Ejection Sensor
Paper Exit Sensor Board
Paper Exit Sensor
Face up/down Solenoid
Dev. Movement Sensor Board
Cyan
Magenta
Yellow
Black
Cam Motor Board
C-Cam
M-Cam
Y-Cam
B-Cam
Toner Cartridge Selector/Paper Eject Unit Interface Circuit
Sensor Board
Sensors (Registration Roller, Paper Feed)
Paper Feed Unit Board
Sensors (No Paper, Pickup Roller, Transfer Roller)
Registration Clutch
Solenoid
Multi Purpose Tray Motor
Solenoid
Paper Feed Unit Interface Circuit
Paper Feeder Unit
Tray Sensor Board
Paper Tray Sensor Circuit
Pre-Transfer Board
Lamp Control Circuit
Eraser Board
Toner Empty Sensor (R) Board
Toner Empty Sensor (T) Board
Y Clutch
M Clutch
C Clutch
B Clutch
YSLVCTL
MSLVCTL
CSLVCTL
BSLVCTL
(X2) OSC 650717MHZ
Toner Empty Sensor Circuit
Clutch Control Circuit
(IC3) ASIC
Interlock Switches
Left Door
Right Door
Front Door
+24V
+24VSRC
Interlock Switch Circuit
Power Supply Unit
24V
+5VIP
+5V
Switching/ Voltage Controller
Rectifier
Voltage Detector
Current Detector
Filter
Fuse
Fuse
Power Switch
FG
Fuser Lamp Driver
High Voltage Unit Interface Circuit
High Voltage Unit
Cleaning Board
Solenoid
Position Sensor
Accumulator Cleaner Control Circuit
FSRCTL
Thermostat
Thermistor
Halogen Lamp
Fuser Temp. Controll Circuit
TH
WEBCTL
Solenoid
Oil Web Unit
Fuser Board
EEPROM 2Kbit
Fuser Unit Interface Circuit
DSRS
TS
Fuser Unit
Fuse Resistor
Accumulator Roller Home Position Sensor
A-roll Home Sensor Circuit
+5V
Color Imaging Kit
EEPROM 2Kbit
TENSNOT
Tension Switch
Color Imaging Kit Interface Circuit
+5VLD
LD Driver
Laser Beam Detector
LSU Interface Circuit
BDLD
Polygon Motor Board With Polygon Mirror
Laser Scanning Unit
Printer Main Controll Board
Controller Relay Board
VD0 ~ 3 4Bit Parallel Video Image Data
VCLK16
HSZ
VS2
Fuser Fan
Fuser Fan Control Circuit
Ozone Fan
Ozone Fan Control Circuit
+5V
Reset Circuit
Reset
(IC5) SRAM 64Kbit
(IC4) EPROM 64Kbit
(IC2) CPU
Printing Control Lines
Serial Communication Lines
+5VIP
TH
Test
OSRSTS
WEBCTL
(SW1)
Engine Test Switch
(X1) 25MHz
Option Feeder Interface Circuit
(IC6) EEPROM 4Kbit
Option Feeder
Polygon Motor Interface Circuit
Toner Cartridge Drive Motor (Sleeve Motor) Interface Circuit
Toner Cartridge Drive Motor (Sleeve Motor) Board
Feed Motor Interface Circuit
Feed Motor Board
Main Motor Interface Circuit
Main Motor Board
Temprature/Humiditry Sensor Board

6.2 Printer Main Control Board Block Diagram


Printer Main Controller Board
IC1
CPU
IC5, 6
Program ROM
1MB
4Mbit x2
X1
OSC
64MHz
IC9
EEPROM
8kbit
IC10
Work Memory
512KB
DRAM
4Mbit x1
CN7, 8, 9
SIMM Socket
(3 socket)
ASIC1 (IC2)
CN6
Front Panel Connector
I/O Control
Work Memory
controll
CN1
IC32
Parallel Connector
Bi-Centronics
Controller
DMA
Timmer
Page memory
16MB SIMM (Standard)
Engine I/F
Connector
CN4
To Engine Control Board
through controller relay board
SW1
SCSI ID Switch
IC30
ASIC2 (IC3)
ASIC3 (IC4)
CN2
SCSI Connector
SCSI
Controller
FIFO
Filter
RGB->CMYK
Converter
Compression
Decompression
Dither
output
Engine
I/F
CN5
Option Connector
(network board)
Color/Mono
Discrimination
Caracter/Image
Discrimination
Page Memory
control
Image Line
Memory
256KSRAM X4
IC11 ~ 14
Table Memory
1MSRAM X1
IC15
Compression
Line Memory
1MSRAM X2
IC16, 17
Line Memory
256KSRAM X5
IC25 ~ 26

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6.3 General Description

6.3.1 Printer Main Control Board

The printer main control board handles the SCSI from the scanner, SCSI and parallel from a host computer, and erthernet data from the option erthernet connector (network board). This board transforms them a format suitable for the print engine. This board is comprised of mainly IC1 (ASIC1), IC2 (ASIC2) and IC3 (ASIC3).

IC1 (ASIC1)

This IC is used for controlling the CPU, and consists of the DMA controller, CPU work memory controller, I/O controller, Timers.

IC2 (ASIC2)

This IC is used for converting image data from a host computer or scanner to color data (YMCK) suitable for the print engine, and also has the data compressing circuit. The followings are the main functions.

1) Capability of processing data at a max. 12 MB/sec. (4 M pixels/sec.)
2) 64 byte FIFO
3) Filtering fuction (for RGB or one color data only)
4) Iamge area discrimination function
5) Non-reciprocal block compression function
6) Monochrome discrimination function
7) Color converion function
8) UCR function
9) Data packing fuction

IC3 (ASIC3)

This IC is used for expanding the color compressed data from the IC2, controlling the page memory (SIMM) and communicating between this board and engine control board. The followings are the main functions

1) Page mamory control functions
2) Expansion function
3) Dithering function
4) Synchronizer function for engine data timing
5) Engine interface function

6.3.2 Power Supply Unit

This board supplies DC low voltage (+5V, +5VIP, +24V) to the each board. It also supplies AC voltage to the halogen heat lamp in the fuser unit

Voltage	Supply to
+5VIP	Printer Main Control Board
+5V	Engine Control Board, Color Imaging Kit, LSU
+24V	3 Motors, 3 Fan Motors, Cams, Clutches, Solenoids, High Voltage board, Interlock Switches

6.3.3 High Voltage Power Supply Unit

This board outputs the 5 high voltages used for electronic photographic process. The 5 voltages consists of grid bias (GRID: -450 ~ -600V), charge corona (CHG : -5KV), development bias (DEV : -80 ~ -400V), FTR bias (FTR : +350 ~ +800V), STR bias (STR1 : +500 ~ +1600V, STR2 : +1300 ~ +2700V). If the signal STRSEL (pin 13, CN401) is low, STR1 is generated. If the signal STREL is high, STR2 is generated. The GRID and CHG are supplied for the scorotron charge unit. The GRID, DEV, FTR and STR voltages are varied by analog data from engine control board. Each of the high voltages are specifically set depending on the print media, selected resolution, printing mode, duplicate mode, humidity/temperature range of the room. The humidity and temperature ranges are detected by a humidity sensor.

6.3.4 Engine Control Board

This board is the core of printer engine control. It's major circuit consists of the EEPROM circuit, video interface circuit, high voltage unit interface circuit, accumulator cleaner control circuit, fuser temperature control circuit, fuser unit interface circuit, option feeder interface circuit, fuser fan control circuit, ozone fan control circuit, clutch control circuit, toner empty sensor circuit, fuser heat lamp control circuit, paper tray sensor circuit, paper feed unit interface circuit, toner cartridge selector/paper eject unit interface circuit, etc.

6.3.5 Eraser Board

This board consists of 10 LEDs and 4 resister. The light of the LED removes random negative charges from the OPC belt.

6.3.6 Pre-Transfer Board

This board consists of 10 LEDs and 4 resister. The light of the LED removes remaining negative charges from the unexposed portions of the OPC belt.

6.3.7 Sensors and Small Boards

The following table (on the next page) explains the check points and signal levels of the sensors and small boards.

Check points of the sensors and small boards

No.	Sensor Name	Signal Name	Active	Check CN No. Transistor No./Pin No.	Position	Remarks
1	Front Door Open Switch	DOPNFR	H	(Q5/1)	Front Chassis Under Front Panel	Interlock Switch
2	Toner Cartridge/Paper Eject Unit Open Switch	DOPNFR	H	(Q5/1)		
3	Left Side Door Open Switch	DOPNFR	H	(Q5/2)	Left Door Rear Side	
4	Black Toner Cartridge Level (Transmitter) Sensor	BTECTL	H	CN 5/3	Front Chassis Center (Toner Cartridge Level (Transmitter) Sensor)	LED
5	Yellow Toner Cartridge Level (Transmitter) Sensor	YTECTL	H	CN 5/4		
6	Magenta Toner Cartridge Level (Transmitter) Sensor	MTECTL	H	CN 5/5		
7	Cyan Toner Cartridge Level (Transmitter) Sensor	CTECTL	H	CN 5/6		
8	Cyan Toner Cartridge Level (Receive) Sensor	CTEOUT	L	CN 6/6	Rear Chassis Drive Unit (Toner Cartridge Level (Receive) Sensor)	Phototransistor
9	Magenta Toner Cartridge Level (Receive) Sensor	MTEOUT	L	CN 6/7		
10	Yellow Toner Cartridge Level (Receive) Sensor	YTEOUT	L	CN 6/8		
11	Black Toner Cartridge Level (Receive) Sensor	BTEOUT	L	CN 6/9		
12	OPC Home Position Sensor	OPS	H	CN 10/5	Color Imaging Kit (OPS Memory Board)	Photointerrupter Reflective type
13	CIK Tension Not	$\overline{\text{TENSNOT}}$	L	CN 10/6	Color Imaging Kit	Small Interlock
14	Accumulator Belt Home Position Sensor	$\overline{\text{HPS}}$	L	CN 13/3	Rear Chassis (Accumulator Belt Position Sensor Board)	Photointerrupter
15	Cleaning Blade Movement Sensor	CLBPS	H	CN 18/5	Rear Chassis (Cleaning Board)	
16	Multi Purpose Pickup Sensor	MPPKUP	H	CN 20/1	Paper Feed Unit (Paper Feed Unit Board)	
17	Multi Purpose Paper Out Sensor	MPPSEN	H	CN 20/3	Paper Feed Unit (Paper Feed Sensor Board)	
18	Registration Sensor	REGSEN	H	CN 20/5		
19	No Paper Feeder Unit	PFUNOT	H	CN 20/10	Paper Feed Unit (Paper Feed Unit Board)	Pattern short (GND)
20	Paper Transfer Roller Movement Sensor	TRRPS	H	CN 20/11		Photointerrupter
21	No Paper in the cassette	UPNOT	H	CN 20/12		
22	Black Toner Cartridge Movement Sensor	BCMPS	H	CN 21/6	Toner Cartridge Selector/Paper Eject Unit (Toner Cartridge Movement Sensor Board)	
23	Yellow Toner Cartridge Movement Sensor	YCMPS	H	CN 21/7		
24	Magenta Toner Cartridge Movement Sensor	MCMPS	H	CN 21/8		
25	Cyan Toner Cartridge Movement Sensor	CCMPS	H	CN 21/9		
26	Paper Ejection Sensor	EXITSEN1	H	CN 21/15	Toner Cartridge Selector/Paper Eject Unit (Paper Ejection Sensor Board)	
27	Paper Exit Sensor	EXITSEN2	H	CN 21/16	Toner Cartridge Selector/Paper Eject Unit (Paper Exit Sensor Board)	
28	Paper Tray Full Sensor	EXITFULL	H	CN 21/20	Toner Cartridge Selector/Paper Eject Unit (Paper Tray Full Sensor Board)	
29	No Oil Web Unit	OSRSTS	Analog	CN 25/7	Fuser Unit	Resistor
30	No Fuser Unit	FSRNOT	H	CN 25/8	Fuser Unit (Fuser Memory Board)	Pattern short (GND)

No.	Sensor Name	Signal Name	Active	Check CN/ Pin No.	Sensor Position	Remarks
31	Fuser Temperature Sensor	TH	Analog	CN 25/10	Fuser Unit	Thermistor
32	Temperature Sensor	HUMDTH	Analog	CN 27/1	Rear Bottom (Humidity Sensor Board)	Thermistor
33	Humidity Sensor	HUMD	Analog	CN 27/3		Humidity Sensor

No.	Sensor Name	Signal Name	Active						Check CN/Pin No.	Sensor Position	Remarks
34	Paper Tray Switch (3)	Paper	Letter	A4	Legal	OHP (Letter)	OHP (A4)	No Cas.	—	Bottom Chassis (Tray Sensor Board)	Push Switch
		UPSZ0	L	H	H	L	H	H	CN 17/2		
		UPSZ1	H	H	L	L	L	H	CN 17/3		
		UPSZ2	H	L	H	H	L	H	CN 17/4		

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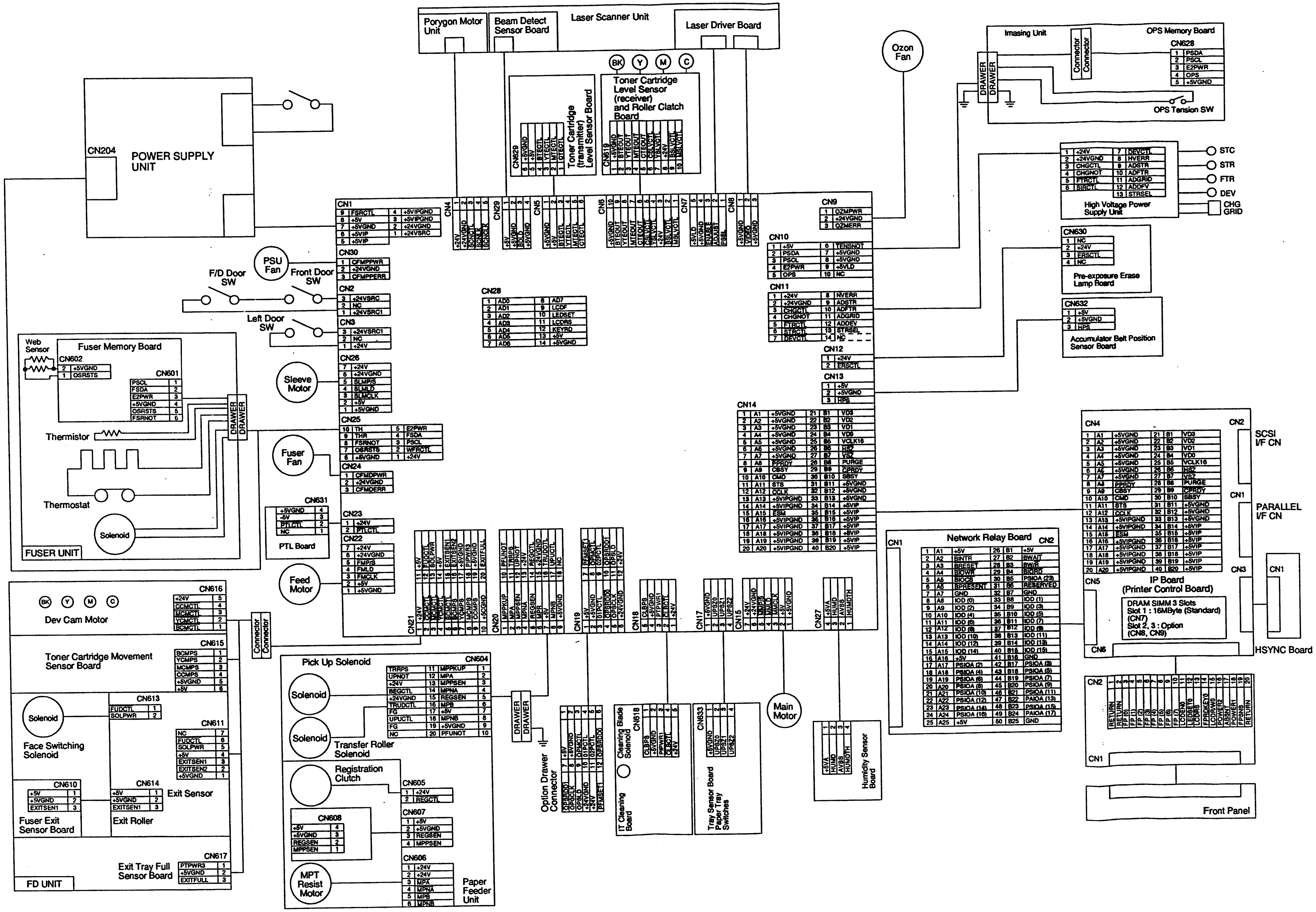
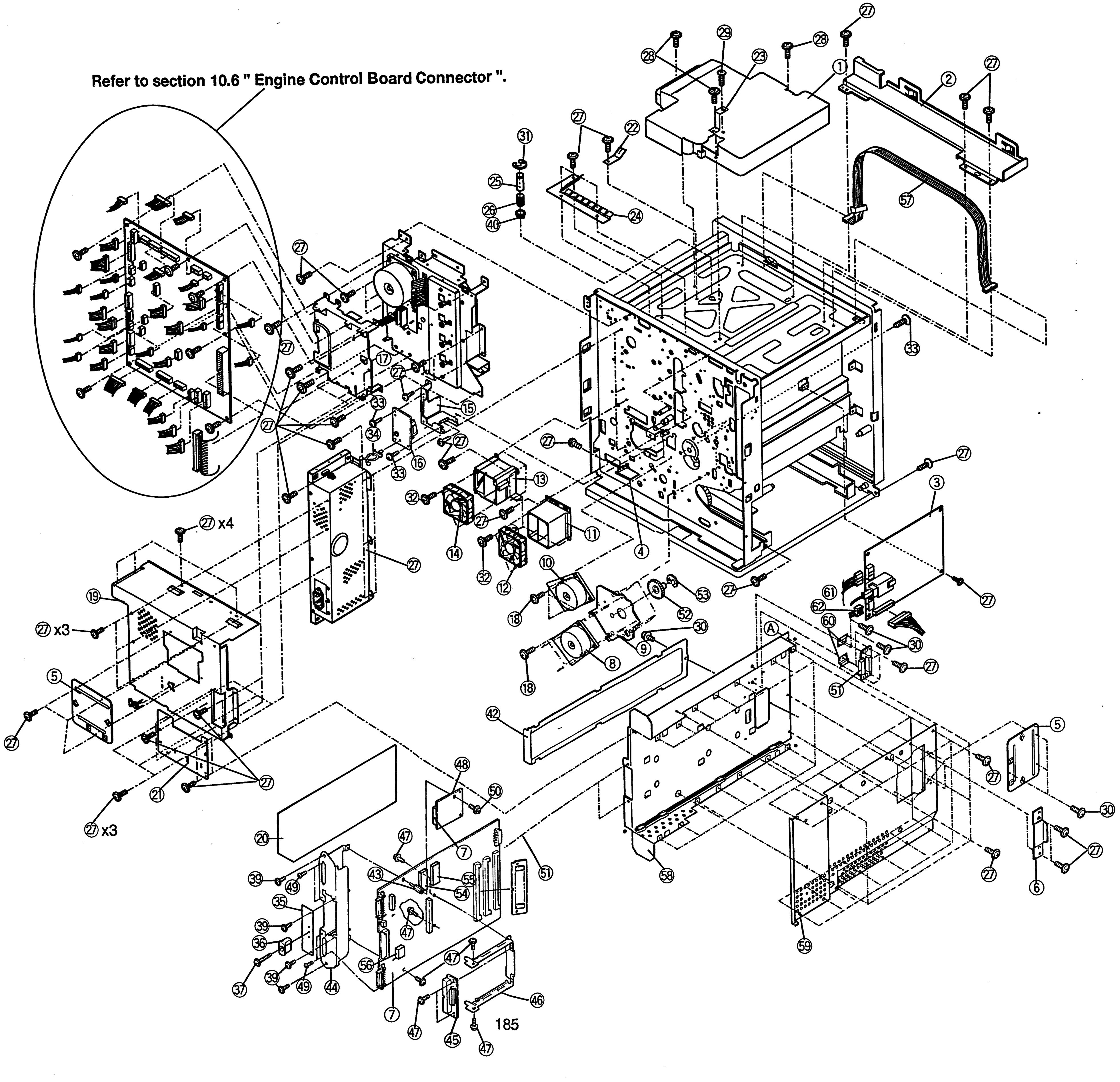
6.4 Connection Diagram


Porygon Motor Unit
Beam Detect Sensor Board
Laser Scanner Unit
Laser Driver Board
Ozon Fan
Imasing Unit
OPS Memory Board
CN628
OPS Tension SW
DRAWER
Connector
Toner Cartridge Level Sensor (receiver) and Roller Clatch Board
Toner Cartridge (transmitter) Level Sensor Board
BK Y M C
CN204
POWER SUPPLY UNIT
PSU Fan
F/D Door SW
Front Door SW
Left Door SW
Web Sensor
Fuser Memory Board
CN602
CN601
Thermistor
Thermostat
Solenoid
FUSER UNIT
Sleeve Motor
Fuser Fan
CN631
PTL Board
Feed Motor
CN1
CN30
CN2
CN3
CN26
CN25
CN24
CN23
CN22
CN28
CN4
CN29
CN5
CN8
CN7
CN6
CN9
CN10
CN11
CN12
CN13
CN14
CN21
CN20
CN19
CN18
CN17
CN15
CN27
High Voltage Power Supply Unit
STC
STR
FTR
DEV
CHG
GRID
CN630
Pre-exposure Erase Lamp Board
CN632
Accumulator Belt Position Sensor Board
Dev Cam Motor
CN616
Toner Cartridge Movement Sensor Board
CN615
CN613
Face Switching Solenoid
CN611
CN610
CN614
Exit Sensor
Fuser Exit Sensor Board
Exit Roller
CN617
Exit Tray Full Sensor Board
FD UNIT
Pick Up Solenoid
CN604
Transfer Roller Solenoid
Registration Clutch
CN605
CN607
CN608
CN606
MPT Resist Motor
Paper Feeder Unit
Option Drawer Connector
IT Cleaning Board
Cleaning Blade Solenoid
CN618
CN633
Tray Sensor Board Paper Tray Switches
Main Motor
Humidity Sensor Board
Network Relay Board
CN1
CN2
CN4
CN5
CN6
CN3
SCSI I/F CN
PARALLEL I/F CN
IP Board (Printer Control Board)
DRAM SIMM 3 Slots
Slot 1 : 16MByte (Standard) (CN7)
Slot 2, 3 : Option (CN8, CN9)
HSYNC Board
Front Panel

10.5 Upper, Rear and Left Side Parts


Refer to section 10.6 " Engine Control Board Connector ".

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6.5 Explanation of Connectors

Printer Main Control Board

CN1

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
A1	BSY	Busy	Out	B1	GND	Ground	-
A2	SEL	Select	Out	B2	GND	Ground	-
A3	$\overline{\text{ACKNLG}}$	Acknowledge	Out	B3	GND	Ground	-
A4	$\overline{\text{FLT}}$	Fault	Out	B4	GND	Ground	-
A5	PERR	PError	Out	B5	GND	Ground	-
A6	DATA1	Parallel Data Bus	In/Out	B6	GND	Ground	-
A7	DATA2	Parallel Data Bus	In/Out	B7	GND	Ground	-
A8	DATA3	Parallel Data Bus	In/Out	B8	GND	Ground	-
A9	DATA4	Parallel Data Bus	In/Out	B9	GND	Ground	-
A10	DATA5	Parallel Data Bus	In/Out	B10	GND	Ground	-
A11	DATA6	Parallel Data Bus	In/Out	B11	GND	Ground	-
A12	DATA7	Parallel Data Bus	In/Out	B12	GND	Ground	-
A13	DATA8	Parallel Data Bus	In/Out	B13	GND	Ground	-
A14	$\overline{\text{INIT}}$	Init	In	B14	GND	Ground	-
A15	$\overline{\text{STR}}$	Strobe	In	B15	GND	Ground	-
A16	$\overline{\text{SELIN}}$	Select in	In	B16	GND	Ground	-
A17	$\overline{\text{AUTFD}}$	Auto Feed	In	B17	GND	Ground	-
A18	HST_H	Host High	In	B18	GND	Ground	-

CN2

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
1	GND	Ground	-	26	$\overline{\text{SCDB[0]}}$	SCSI Data Bus	In/Out
2	GND	Ground	-	27	$\overline{\text{SCDB[1]}}$	SCSI Data Bus	In/Out
3	GND	Ground	-	28	$\overline{\text{SCDB[2]}}$	SCSI Data Bus	In/Out
4	GND	Ground	-	29	$\overline{\text{SCDB[3]}}$	SCSI Data Bus	In/Out
5	GND	Ground	-	30	$\overline{\text{SCDB[4]}}$	SCSI Data Bus	In/Out
6	GND	Ground	-	31	$\overline{\text{SCDB[5]}}$	SCSI Data Bus	In/Out
7	GND	Ground	-	32	$\overline{\text{SCDB[6]}}$	SCSI Data Bus	In/Out
8	GND	Ground	-	33	$\overline{\text{SCDB[7]}}$	SCSI Data Bus	In/Out
9	GND	Ground	-	34	$\overline{\text{SCDBP}}$	SCSI Data Bus Parity	In/Out
10	GND	Ground	-	35	GND	GND	-
11	GND	Ground	-	36	GND	GND	-
12	RESERVED	Reserved	-	37	RESERVED	Reserved	-
13	NC	No Connection	-	38	$\overline{\text{TMPWR}}$	Terminator Power(+5V)	In
14	RESERVED	Reserved	-	39	RESERVED	Reserved	-
15	GND	Ground	-	40	GND	GND	-
16	GND	Ground	-	41	$\overline{\text{ATN}}$	Attention	In/Out
17	GND	Ground	-	42	GND	GND	-
18	GND	Ground	-	43	$\overline{\text{BSY}}$	Busy	In/Out
19	GND	Ground	-	44	$\overline{\text{ACK}}$	Acknowledge	In/Out
20	GND	Ground	-	45	$\overline{\text{RST}}$	Reset	In/Out
21	GND	Ground	-	46	$\overline{\text{MSG}}$	Message	In/Out
22	GND	Ground	-	47	$\overline{\text{SEL}}$	Select	In/Out
23	GND	Ground	-	48	$\overline{\text{C\_D}}$	Control/Data	In/Out
24	GND	Ground	-	49	$\overline{\text{REQ}}$	Request	In/Out
25	GND	Ground	-	50	$\overline{\text{I\_O}}$	Input/Output	In/Out

CN3

Pin No.	Symbol	Function	In/Out
1	HE	HORIZONTAL ENABLE	OUT
2	CLK16	CLOCK 16MHZ	OUT
3	$\overline{\text{RESET}}$	RESET	OUT
4	GND	GND	-
5	RVD1	RETURN VIDEO DATA	IN
6	RVD0	RETURN VIDEO DATA	IN
7	RVD3	RETURN VIDEO DATA	IN
8	RVD2	RETURN VIDEO DATA	IN
9	$\overline{\text{HSZO}}$	HSIZE OUTPUT	IN
10	$\overline{\text{HSZI}}$	HSIZE INPUT	OUT
11	VD2	VIDEO DATA	OUT
12	VD3	VIDEO DATA	OUT
13	VD1	VIDEO DATA	OUT
14	VD0	VIDEO DATA	OUT
15	GND	GND	-
16	GND	GND	-
17	GND	GND	-
18	$\overline{\text{VCLK}}$	VIDEO CLOCK	OUT
19	VCC	+5V POWER SUPPLY	-
20	VCC	+5V POWER SUPPLY	-

CN4

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
A1	+5VGND	Ground	-	B1	VD3	Image Data	Out
A2	+5VGND	Ground	-	B2	VD2	Image Data	Out
A3	+5VGND	Ground	-	B3	VD1	Image Data	Out
A4	+5VGND	Ground	-	B4	VD0	Image Data	Out
A5	+5VGND	Ground	-	B5	VCLK16	Video Clock	In
A6	+5VGND	Ground	-	B6	$\overline{\text{HSZ}}$	Vertical Size	In
A7	$\overline{\text{PPRDY}}$	Print Engine Power Ready	In	B7	$\overline{\text{VSZ}}$	Horizontal Size	In
A8	CBSY	Command Busy	Out	B8	PURGE	Purge media	In
A9	CMD	Command Serial Data	Out	B9	$\overline{\text{CPRDY}}$	Controller Power Ready	In
A10	STS	Status Serial Data	In	B10	SBSY	Status Busy	In
A11	$\overline{\text{CCLK}}$	Command Clock	Out	B11	+5VGND	GND	-
A12	+5VIPGND	Ground	-	B12	+5VGND	GND	-
A13	+5VIPGND	Ground	-	B13	+5VGND	GND	-
A14	+5VIPGND	Ground	-	B14	+5VIP	+5V	-
A15	$\overline{\text{ESM}}$	Energy Star	Out	B15	+5VIP	+5V	-
A16	+5VIPGND	Ground	-	B16	+5VIP	+5V	-
A17	+5VIPGND	Ground	-	B17	+5VIP	+5V	-
A18	+5VIPGND	Ground	-	B18	+5VIP	+5V	-
A19	+5VIPGND	Ground	-	B19	+5VIP	+5V	-
A20	+5VIPGND	Ground	-	B20	+5VIP	+5V	-

CN5

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
A1	+5V	+5V	-	B1	GND	Ground	-
A2	$\overline{\text{BINTR}}$	Interrupt	In	B2	$\overline{\text{BWAIT}}$	Wait	In
A3	$\overline{\text{BRESET}}$	Reset	Out	B3	$\overline{\text{BW/R}}$	Write/Read	Out
A4	$\overline{\text{BIOWR}}$	IO Write	Out	B4	$\overline{\text{BIORD}}$	IO Read	Out
A5	$\overline{\text{BIOCS}}$	IO Chip Select	Out	B5	PSIOA[23]	PSIO Address Bus	Out
A6	$\overline{\text{BPRESENT}}$	Present	In	B6	RESERVED	Reserved	-
A7	GND	Ground	-	B7	GND	Ground	-
A8	IOD[0]	IO Data Bus	In/Out	B8	IOD[1]	IO Data Bus	In/Out
A9	IOD[2]	IO Data Bus	In/Out	B9	IOD[3]	IO Data Bus	In/Out
A10	IOD[4]	IO Data Bus	In/Out	B10	IOD[5]	IO Data Bus	In/Out
A11	IOD[6]	IO Data Bus	In/Out	B11	IOD[7]	IO Data Bus	In/Out
A12	IOD[8]	IO Data Bus	In/Out	B12	IOD[9]	IO Data Bus	In/Out
A13	IOD[10]	IO Data Bus	In/Out	B13	IOD[11]	IO Data Bus	In/Out
A14	IOD[12]	IO Data Bus	In/Out	B14	IOD[13]	IO Data Bus	In/Out
A15	IOD[14]	IO Data Bus	In/Out	B15	IOD[15]	IO Data Bus	In/Out
A16	GND	Ground	-	B16	GND	Ground	-
A17	PSIOA[2]	PSIO Address Bus	Out	B17	PAIOA[3]	PSIOAddress Bus	Out
A18	PSIOA[4]	PSIO Address Bus	Out	B18	PAIOA[5]	PSIO Address Bus	Out
A19	PSIOA[6]	PSIO Address Bus	Out	B19	PAIOA[7]	PSIO Address Bus	Out
A20	PSIOA[8]	PSIO Address Bus	Out	B20	PAIOA[9]	PSIO Address Bus	Out
A21	PSIOA[10]	PSIO Address Bus	Out	B21	PAIOA[11]	PSIO Address Bus	Out
A22	PSIOA[12]	PSIO Address Bus	Out	B22	PAIOA[13]	PSIO Address Bus	Out
A23	PSIOA[14]	PSIO Address Bus	Out	B23	PAIOA[15]	PSIO Address Bus	Out
A24	PSIOA[16]	PSIO Address Bus	Out	B24	PAIOA[17]	PSIO Address Bus	Out
A25	+5V	+5V	-	B25	GND	Ground	-

CN6

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
A1	RETURN	FP GND	-	A6	LCDEN1	LCD Enable	Out
B1	RETURN	FP GND	-	B6	LEDSET0	LED Set	Out
A2	FP[0]	FP Data Bus	In/Out	A7	LCDRS	LCD Register Select	Out
B2	FP[1]	FP Data Bus	In/Out	B7	FPRDKEY0	FP Ready Key	Out
A3	FP[2]	FP Data Bus	In/Out	A8	LCDR/W0	LCD Read/Write	Out
B3	FP[3]	FP Data Bus	In/Out	B8	POWER	FP +5V	-
A4	FP[4]	FP Data Bus	In/Out	A9	ABSNT	Absent	In
B4	FP[5]	FP Data Bus	In/Out	B9	POWER1	FP +5V	-
A5	FP[6]	FP Data Bus	In/Out	A10	FPSNS	FP Sense	Out
B5	FP[7]	FP Data Bus	In/Out	B10	RETURN	FP GND	-

CN7

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
1	GND	GND	-	37	NC	No Connection	-
2	PMD(0)	Page Memory Data Bus	In/Out	38	NC	No Connection	-
3	PMD(16)	Page Memory Data Bus	In/Out	39	GND	GND	-
4	PMD(1)	Page Memory Data Bus	In/Out	40	$\overline{\text{PMCASB(0)}}$	Page Memory Column Address	Out
5	PMD(17)	Page Memory Data Bus	In/Out	41	$\overline{\text{PMCASB(2)}}$	Page Memory Column Address	Out
6	PMD(2)	Page Memory Data Bus	In/Out	42	$\overline{\text{PMCASB(3)}}$	Page Memory Column Address	Out
7	PMD(18)	Page Memory Data Bus	In/Out	43	$\overline{\text{PMCASB(1)}}$	Page Memory Column Address	Out
8	PMD(3)	Page Memory Data Bus	In/Out	44	$\overline{\text{PMRASB(0)}}$	Page Memory Row Address	Out
9	PMD(19)	Page Memory Data Bus	In/Out	45	$\overline{\text{PMRASB(1)}}$	Page Memory Row Address	Out
10	+5V	+5V	-	46	NC	No Connection	-
11	NC	No Connection	-	47	$\overline{\text{WE}}$	Write Enable	Out
12	PMAB(0)	Page Memory Address Bus	Out	48	$\overline{\text{OE}}$	Output Enable	Out
13	PMAB(1)	Page Memory Address Bus	Out	49	PMD[8]	Page Memory Data Bus	In/Out
14	PMAB(2)	Page Memory Address Bus	Out	50	PMD[24]	Page Memory Data Bus	In/Out
15	PMAB(3)	Page Memory Address Bus	Out	51	PMD[9]	Page Memory Data Bus	In/Out
16	PMAB(4)	Page Memory Address Bus	Out	52	PMD[25]	Page Memory Data Bus	In/Out
17	PMAB(5)	Page Memory Address Bus	Out	53	PMD[10]	Page Memory Data Bus	In/Out
18	PMAB(6)	Page Memory Address Bus	Out	54	PMD[26]	Page Memory Data Bus	In/Out
19	PMAB(10)	Page Memory Address Bus	Out	55	PMD[11]	Page Memory Data Bus	In/Out
20	PMD(4)	Page Memory Data Bus	In/Out	56	PMD[27]	Page Memory Data Bus	In/Out
21	PMD(20)	Page Memory Data Bus	In/Out	57	PMD[12]	Page Memory Data Bus	In/Out
22	PMD(5)	Page Memory Data Bus	In/Out	58	PMD[28]	Page Memory Data Bus	In/Out
23	PMD(21)	Page Memory Data Bus	In/Out	59	+5V	+5V	-
24	PMD(6)	Page Memory Data Bus	In/Out	60	PMD[29]	Page Memory Data Bus	In/Out
25	PMD(22)	Page Memory Data Bus	In/Out	61	PMD[13]	Page Memory Data Bus	In/Out
26	PMD(7)	Page Memory Data Bus	In/Out	62	PMD[30]	Page Memory Data Bus	In/Out
27	PMD(23)	Page Memory Data Bus	In/Out	63	PMD[14]	Page Memory Data Bus	In/Out
28	PMAB(7)	Page Memory Address Bus	Out	64	PMD[31]	Page Memory Data Bus	In/Out
29	NC	No Connection	-	65	PMD[15]	Page Memory Data Bus	In/Out
30	+5V	+5V	-	66	NC	No Connection	-
31	PMAB(8)	Page Memory Address Bus	Out	67	NC	No Connection	-
32	PMAB(9)	Page Memory Address Bus	Out	68	NC	No Connection	-
33	$\overline{\text{PMRASB1}}$	Page Memory Row address	Out	69	NC	No Connection	-
34	$\overline{\text{PMRASB0}}$	Page Memory Row address	Out	70	NC	No Connection	-
35	NC	No Connection	-	71	NC	No Connection	-
36	NC	No Connection	-	72	GND	GND	-

CN8

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
1	GND	GND	-	37	NC	No Connection	-
2	PMD[0]	Page Memory Data Bus	In/Out	38	NC	No Connection	-
3	PMD[16	Page Memory Data Bus	In/Out	39	GND	GND	-
4	PMD[1]	Page Memory Data Bus	In/Out	40	$\overline{\text{PMCASB(0)}}$	Page Memory Column Address	Out
5	PMD[17]	Page Memory Data Bus	In/Out	41	$\overline{\text{PMCASB(2)}}$	Page Memory Column Address	Out
6	PMD[2]	Page Memory Data Bus	In/Out	42	$\overline{\text{PMCASB(3)}}$	Page Memory Column Address	Out
7	PMD[18]	Page Memory Data Bus	In/Out	43	$\overline{\text{PMCASB(1)}}$	Page Memory Column Address	Out
8	PMD[3]	Page Memory Data Bus	In/Out	44	$\overline{\text{PMRASB(2)}}$	Page Memory Row Address	Out
9	PMD[19]	Page Memory Data Bus	In/Out	45	$\overline{\text{PMRASB(3)}}$	Page Memory Row Address	Out
10	+5V	+5V	-	46	NC	No Connection	-
11	NC	No Connection	-	47	$\overline{\text{WE}}$	Write Enable	Out
12	PMAB[0]	Page Memory Address Bus	Out	48	$\overline{\text{OE}}$	Output Enable	Out
13	PMAB[1]	Page Memory Address Bus	Out	49	PMD[8]	Page Memory Data Bus	In/Out
14	PMAB[2]	Page Memory Address Bus	Out	50	PMD[24]	Page Memory Data Bus	In/Out
15	PMAB[3]	Page Memory Address Bus	Out	51	PMD[9]	Page Memory Data Bus	In/Out
16	PMAB[4]	Page Memory Address Bus	Out	52	PMD[25]	Page Memory Data Bus	In/Out
17	PMAB[5]	Page Memory Address Bus	Out	53	PMD[10]	Page Memory Data Bus	In/Out
18	PMAB[6]	Page Memory Address Bus	Out	54	PMD[26]	Page Memory Data Bus	In/Out
19	PMAB[10]	Page Memory Address Bus	Out	55	PMD[11]	Page Memory Data Bus	In/Out
20	PMD[4]	Page Memory Data Bus	In/Out	56	PMD[27]	Page Memory Data Bus	In/Out
21	PMD[20]	Page Memory Data Bus	In/Out	57	PMD[12]	Page Memory Data Bus	In/Out
22	PMD[5]	Page Memory Data Bus	In/Out	58	PMD[28]	Page Memory Data Bus	In/Out
23	PMD[21]	Page Memory Data Bus	In/Out	59	+5V	+5V	-
24	PMD[6]	Page Memory Data Bus	In/Out	60	PMD[29]	Page Memory Data Bus	In/Out
25	PMD[22]	Page Memory Data Bus	In/Out	61	PMD[13]	Page Memory Data Bus	In/Out
26	PMD[7]	Page Memory Data Bus	In/Out	62	PMD[30]	Page Memory Data Bus	In/Out
27	PMD[23]	Page Memory Data Bus	In/Out	63	PMD[14]	Page Memory Data Bus	In/Out
28	PMAB[7]	Page Memory Address Bus	Out	64	PMD[31]	Page Memory Data Bus	In/Out
29	NC	No Connection	-	65	PMD[15]	Page Memory Data Bus	In/Out
30	+5V	+5V	-	66	NC	No Connection	-
31	PMAB[8]	Page Memory Address Bus	Out	67	NC	No Connection	-
32	PMAB[9	Page Memory Address Bus	Out	68	NC	No Connection	-
33	$\overline{\text{PMRASB[3]}}$	Page Memory Row address	Out	69	NC	No Connection	-
34	$\overline{\text{PMRASB[2]}}$	Page Memory Row address	Out	70	NC	No Connection	-
35	NC	No Connection	-	71	NC	No Connection	-
36	NC	No Connection	-	72	GND	GND	-

HSYNC Board

CN1

Pin No.	Symbol	Function	In/Out
1	HE	HORIZONTAL ENABLE	IN
2	CLK16	CLOCK 16MHZ	IN
3	$\overline{\text{RESET}}$	RESET	IN
4	GND	GND	-
5	RVD1	RETURN VIDEO DATA	OUT
6	RVD0	RETURN VIDEO DATA	OUT
7	RVD3	RETURN VIDEO DATA	OUT
8	RVD2	RETURN VIDEO DATA	OUT
9	$\overline{\text{HSZO}}$	HSIZE OUTPUT	OUT
10	$\overline{\text{HSZI}}$	HSIZE INPUT	IN
11	VD2	VIDEO DATA	IN
12	VD3	VIDEO DATA	IN
13	VD1	VIDEO DATA	IN
14	VD0	VIDEO DATA	IN
15	GND	GND	-
16	GND	GND	-
17	GND	GND	-
18	$\overline{\text{VCLK}}$	VIDEO CLOCK	IN
19	VCC	+5V POWER SUPPLY	-
20	VCC	+5V POWER SUPPLY	-

CN9

Pin No.	Signal Name	Description	In/Out	Pin No.	Signal Name	Description	In/Out
1	GND	GND	-	37	NC	No Connection	-
2	PMD[0]	Page Memory Data Bus	In/Out	38	NC	No Connection	-
3	PMD[16]	Page Memory Data Bus	In/Out	39	GND	GND	-
4	PMD[1]	Page Memory Data Bus	In/Out	40	$\overline{\text{PMCASB(0)}}$	Page Memory Column Address	Out
5	PMD[17]	Page Memory Data Bus	In/Out	41	$\overline{\text{PMCASB(2)}}$	Page Memory Column Address	Out
6	PMD[2]	Page Memory Data Bus	In/Out	42	$\overline{\text{PMCASB(3)}}$	Page Memory Column Address	Out
7	PMD[18]	Page Memory Data Bus	In/Out	43	$\overline{\text{PMCASB(1)}}$	Page Memory Column Address	Out
8	PMD[3]	Page Memory Data Bus	In/Out	44	$\overline{\text{PMRASB(4)}}$	Page Memory Row Address	Out
9	PMD[19]	Page Memory Data Bus	In/Out	45	$\overline{\text{PMRASB(5)}}$	Page Memory Row Address	Out
10	+5V	+5V	-	46	NC	No Connection	-
11	NC	No Connection	-	47	$\overline{\text{WE}}$	Write Enable	Out
12	PMAB[0]	Page Memory Address Bus	Out	48	$\overline{\text{OE}}$	Output Enable	Out
13	PMAB[1]	Page Memory Address Bus	Out	49	PMD[8]	Page Memory Data Bus	In/Out
14	PMAB[2]	Page Memory Address Bus	Out	50	PMD[24]	Page Memory Data Bus	In/Out
15	PMAB[3]	Page Memory Address Bus	Out	51	PMD[9]	Page Memory Data Bus	In/Out
16	PMAB[4]	Page Memory Address Bus	Out	52	PMD[25]	Page Memory Data Bus	In/Out
17	PMAB[5]	Page Memory Address Bus	Out	53	PMD[10]	Page Memory Data Bus	In/Out
18	PMAB[6]	Page Memory Address Bus	Out	54	PMD[26]	Page Memory Data Bus	In/Out
19	PMAB[10]	Page Memory Address Bus	Out	55	PMD[11]	Page Memory Data Bus	In/Out
20	PMD[4]	Page Memory Data Bus	In/Out	56	PMD[27]	Page Memory Data Bus	In/Out
21	PMD[20]	Page Memory Data Bus	In/Out	57	PMD[12]	Page Memory Data Bus	In/Out
22	PMD[5]	Page Memory Data Bus	In/Out	58	PMD[28]	Page Memory Data Bus	In/Out
23	PMD[21]	Page Memory Data Bus	In/Out	59	+5V	+5V	-
24	PMD[6]	Page Memory Data Bus	In/Out	60	PMD[29]	Page Memory Data Bus	In/Out
25	PMD[22]	Page Memory Data Bus	In/Out	61	PMD[13]	Page Memory Data Bus	In/Out
26	PMD[7]	Page Memory Data Bus	In/Out	62	PMD[30]	Page Memory Data Bus	In/Out
27	PMD[23]	Page Memory Data Bus	In/Out	63	PMD[14]	Page Memory Data Bus	In/Out
28	PMAB[7]	Page Memory Address Bus	Out	64	PMD[31]	Page Memory Data Bus	In/Out
29	NC	No Connection	-	65	PMD[15]	Page Memory Data Bus	In/Out
30	+5V	+5V	-	66	NC	No Connection	-
31	PMAB[8]	Page Memory Address Bus	Out	67	NC	No Connection	-
32	PMAB[9	Page Memory Address Bus	Out	68	NC	No Connection	-
33	$\overline{\text{PMRASB[5]}}$	Page Memory Row address	Out	69	NC	No Connection	-
34	$\overline{\text{PMRASB[4]}}$	Page Memory Row address	Out	70	NC	No Connection	-
35	NC	No Connection	-	71	NC	No Connection	-
36	NC	No Connection	-	72	GND	GND	-

Engine Control Board

CN1

Pin No.	Signal Name	Description	Direction
1	+24VSRC	+24V	IN
2	+24VGND	Ground	–
3	+5VIPGND	Ground	–
4	+5VIPGND	Ground	–
5	+5VIP	+5V for IP	IN
6	+5VIP	+5V for IP	IN
7	+5VGND	Ground	–
8	+5V	+5V for ECB	IN
9	$\overline{\text{FSRCTL}}$	Fuser control	OUT

CN2

Pin No.	Signal Name	Description	Direction
1	+24VSRC1	+24V	OUT
2	N.C	Not Connected	–
3	+24VSRC	+24V	IN

CN3

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	N.C	Not Connected	–
3	+24VSRC1	+24V	IN

CN4

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	+24VGND	Ground	–
3	$\overline{\text{SCNCTL}}$	Scanner Motor Control	OUT
4	$\overline{\text{SCNLK}}$	Scanner Motor Control	IN
5	$\overline{\text{SCNCLK}}$	Scanner Motor Control	OUT

CN5

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	+5V	+5V	OUT
3	BTECTL	Black Toner Empty Control	OUT
4	YTECTL	Yellow Toner Empty Control	OUT
5	MTECTL	Magenta Toner Empty Control	OUT
6	CTECTL	Cyan Toner Empty Control	OUT

CN6

Pin No.	Signal Name	Description	Direction
1	$\overline{\text{MSLVCTL}}$	Magenta Sleeve Clutch Control	OUT
2	$\overline{\text{BSLVCTL}}$	Black Sleeve Clutch Control	OUT
3	+24V	+24V	OUT
4	$\overline{\text{YSLVCTL}}$	Yellow Sleeve Clutch Control	OUT
5	$\overline{\text{CSLVCTL}}$	Cyan Sleeve Clutch Control	OUT
6	CTEOUT	Cyan Toner Empty Sensor	IN
7	MTEOUT	Magenta Toner Empty Sensor	IN
8	YTEOUT	Yellow Toner Empty Sensor	IN
9	BTEOUT	Black Toner Empty Sensor	IN
10	+5VGND	Ground	–

CN7

Pin No.	Signal Name	Description	Direction
1	PSEL	Laser Power Select	OUT
2	$\overline{\text{ADJUST}}$	Laser Adjust	OUT
3	$\overline{\text{ENABLE}}$	Laser Enable	OUT
4	+5VGND	Ground	–
5	+5VLD	+5V	OUT

CN8

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	$\overline{\text{VIDEO}}$	Video Data	OUT
3	+5VGND	Ground	–

CN9

Pin No.	Signal Name	Description	Direction
1	OZMPWR	Ozone Motor Power	OUT
2	+24VGND	Ground	–
3	OZMERR	Ozone Motor Error	IN

CN10

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	OUT
2	PSDA	Imaging Unit Serial Data	I/O
3	PSCL	Imaging Unit Serial Clock	OUT
4	E2PWR	EEPROM Power	OUT
5	OPS-C	OPC Home Sensor	IN
6	$\overline{\text{TENSNOT}}$	OPC Tension	IN
7	+5VGND	Ground	–
8	+5VGND	Ground	–
9	+5VLD	+5V	IN
10	+5VLD	+5V	IN

CN11

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	+24VGND	Ground	–
3	$\overline{\text{CHGCTL}}$	Charger Control	OUT
4	CHGNOT	Charger Sensor	IN
5	$\overline{\text{FTRCTL}}$	FTR Control	OUT
6	$\overline{\text{STRCTL}}$	STR Control	OUT
7	$\overline{\text{DEVCTL}}$	DEV Control	OUT
8	HVERR	High Voltage Error	IN
9	ADSTR	A/D STR	OUT
10	ADFTR	A/D FTR	OUT
11	ADGRID	A/D GRID	OUT
12	ADDEV	A/D DEV	OUT
13	STRSEL	STR Select	OUT
14	N.C	Not Connected	–

CN12

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	$\overline{\text{ERSCTL}}$	Erase LED Control	OUT

CN13

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	OUT
2	+5VGND	Ground	–
3	$\overline{\text{HPS}}$	Accumulator Belt Home Sensor	IN

CN14

Pin No.	Signal Name	Description	Direction
A1	+5VGND	Ground	–
A2	+5VGND	Ground	–
A3	+5VGND	Ground	–
A4	+5VGND	Ground	–
A5	+5VGND	Ground	–
A6	+5VGND	Ground	–
A7	+5VGND	Ground	–
A8	$\overline{\text{PPRDY}}$	Printer Power Ready	OUT
A9	CBSY	Command Busy	IN
A10	CMD	Command	IN
A11	STS	Status	OUT
A12	$\overline{\text{CCLK}}$	Communication Clock	IN
A13	+5VIPGND	Ground	–
A14	+5VIPGND	Ground	–
A15	$\overline{\text{ESM}}$	Energy Star Mode	IN
A16	+5VIPGND	Ground	–
A17	+5VIPGND	Ground	–
A18	+5VIPGND	Ground	–
A19	+5VIPGND	Ground	–
A20	+5VIPGND	Ground	–

Pin No.	Signal Name	Description	Direction
B1	VD3	Video Data 3	IN
B2	VD2	Video Data 2	IN
B3	VD1	Video Data 1	IN
B4	VD0	Video Data 0	IN
B5	VCLK16	Video Clock	OUT
B6	$\overline{\text{HSZ}}$	Horizontal Synchronous	OUT
B7	$\overline{\text{VSZ}}$	Vertical Synchronous	OUT
B8	PURGE	Purge Signal	OUT
B9	$\overline{\text{CPRDY}}$	Controller Power Ready	IN
B10	SBSY	Status Busy	OUT
B11	+5VGND	Ground	–
B12	+5VGND	Ground	–
B13	+5VGND	Ground	–
B14	+5VIP	+5V	OUT
B15	+5VIP	+5V	OUT
B16	+5VIP	+5V	OUT
B17	+5VIP	+5V	OUT
B18	+5VIP	+5V	OUT
B19	+5VIP	+5V	OUT
B20	+5VIP	+5V	OUT

CN15

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	+5V	+5V	OUT
3	$\overline{\text{MMCLK}}$	Main Motor Clock	OUT
4	$\overline{\text{MMLD}}$	Main Motor Lock Detect	IN
5	$\overline{\text{MMP/S}}$	Main motor Pulse Start	OUT
6	+24VGND	Ground	–
7	+24V	+24V	OUT

CN17

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	UPSZ0	Paper Size Switch	IN
3	UPSZ1	Paper Size Switch	IN
4	UPSZ2	Paper Size Switch	IN

CN18

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	$\overline{\text{CLBCTL}}$	Cleaning Blade Control	OUT
3	PIPWR1	PI Sensor Power	OUT
4	+5VGND	Ground	–
5	CLBPS	Cleaning Blade Sensor	IN

CN19

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	OUT
2	+5VGND	Ground	–
3	O1PCTL	OP1 Pick Up Solenoid Control	OUT
4	$\overline{\text{OPSRDD0}}$	OP Serial Read Data 0	IN
5	OPSCLK	Option Serial Clock	OUT
6	+24VGND	Ground	–
7	$\overline{\text{PFMSET1}}$	OP Paper Feed Motor Set	OUT
8	$\overline{\text{OPMCTL}}$	Option Motor Control	OUT
9	O2PCTL	OP2 Pick Up Solenoid Control	OUT
10	$\overline{\text{OPSRDD1}}$	OP Serial Read Data 1	IN
11	OPSLD	OP Serial Load	OUT
12	+24V	+24V	OUT

CN20

Pin No.	Signal Name	Description	Direction
1	MPPKUP	MPT Pick Up Solenoid	IN
2	MPA	MPT Resist Monitor Pulse	OUT
3	MPPSEN	MPT Paper Detect	IN
4	MPNA	MPT Resist Motor Pulse	OUT
5	REGSEN	Registration Sensor	IN
6	MPB	MPT Resist Motor Pulse	OUT
7	+5V	+5V	OUT
8	MPNB	MPT Resist Motor Pulse	OUT
9	+5VGND	Ground	–
10	PFUNOT	PFU Not Sensor	IN
11	TRRPS	Transfer Roller Sensor	IN
12	UPNOT	ST. Paper Not Sensor	IN
13	+24V	+24V	OUT
14	REGCTL	Registration Control	OUT
15	+24VGND	Ground	–
16	TRUDCTL	Transfer Roller Solenoid Control	OUT
17	UPUCTL	Pick Up Solenoid Control	OUT
18	N.C	Not Connected	–

CN21

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	$\overline{\text{CCMCTL}}$	Cyan Cam Motor Control	OUT
3	$\overline{\text{MCMCTL}}$	Magenta Cam Motor Control	OUT
4	$\overline{\text{YCMCTL}}$	Yellow Cam Motor Control	OUT
5	$\overline{\text{BCMCTL}}$	Black Cam Motor Control	OUT
6	BCMPS	Black Cam Motor Sensor	IN
7	YCMPS	Yellow Cam Motor Sensor	IN
8	MCMPS	Magenta Cam Motor Sensor	IN
9	CCMPS	Cyan Cam Motor Sensor	IN
10	+5VGND	Ground	–
11	+5V	+5V	OUT
12	$\overline{\text{FUDCTL}}$	Face Up Down Control	OUT
13	SOLPWR	Solenoid Power	OUT
14	+5V	+5V	OUT
15	EXITSEN1	Exit Sensor 1	IN
16	EXITSEN2	Exit Sensor 2	IN
17	+5VGND	Ground	–
18	PIPWR3	Sensor Power	OUT
19	+5VGND	Ground	–
20	EXITFULL	Exit Full Sensor	IN

CN22

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	+5V	+5V	OUT
3	$\overline{\text{FMCLK}}$	Feed Motor Clock	OUT
4	$\overline{\text{FMLD}}$	Feed Motor Lock Detect	IN
5	$\overline{\text{FMP/S}}$	Feed Motor Pulse Start	OUT
6	+24VGND	Ground	–
7	+24V	+24V	OUT

CN23

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	$\overline{\text{PTLCTL}}$	PTL Control	OUT

CN24

Pin No.	Signal Name	Description	Direction
1	CFMDPWR	Cooling DEV Fan Motor Power	OUT
2	+24VGND	Ground	–
3	CFMDERR	Cooling DEV Fan Motor Error	IN

CN25

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	$\overline{\text{WEBCTL}}$	Web Control	OUT
3	PSCL	Fuser Unit Serial Clock	OUT
4	FSDA	Fuser Unit Serial Data	I/O
5	E2PWR	EEPROM Power	OUT
6	+5VGND	Ground	–
7	OSRSTS	Oil Supply Roller Status	IN
8	FSRNOT	Fuser Not Sensor	IN
9	THR	Thermistor	IN
10	TH	Thermistor	OUT

CN26

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	+5V	+5V	OUT
3	$\overline{\text{SLMCLK}}$	Sleeve Motor* Clock	OUT
4	$\overline{\text{SLMLD}}$	Sleeve Motor* Lock Detect	IN
5	$\overline{\text{SLMP/S}}$	Sleeve Motor* Pulse Start	OUT
6	+24VGND	Ground	–
7	+24V	+24V	OUT

*Sleeve Motor=Toner Cartridge Drive Motor

CN27

Pin No.	Signal Name	Description	Direction
1	HUMDTH	Thermistor	IN
2	AVSS	+5V	OUT
3	HUMD	Humidity Sensor	IN
4	+5VA	+5V	OUT

CN28

Pin No.	Signal Name	Description	Direction
1	AD0	Data	I/O
2	AD1	Data	I/O
3	AD2	Data	I/O
4	AD3	Data	I/O
5	AD4	Data	I/O
6	AD5	Data	I/O
7	AD6	Data	I/O
8	AD7	Data	I/O
9	LCDE	LCD E Clock	I/O
10	$\overline{\text{LEDSET}}$	LED Set	OUT
11	LCDRS	LCD Registor Select	OUT
12	$\overline{\text{KEYRD}}$	Key Read	OUT
13	+5V	+5V	OUT
14	+5VGND	Ground	–

CN29

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	OUT
2	+5VGND	Ground	–
3	$\overline{\text{BDLD}}$	Beam Detect Signal	IN
4	+5VGND	Ground	–

CN30

Pin No.	Signal Name	Description	Direction
1	CFMPPWR	Cooling Fan Motor PSU Power	OUT
2	+24VGND	Ground	–
3	CFMPERR	Cooling Fan Motor PSU Error	IN

Fuser Memory Board

CN601

Pin No.	Signal Name	Description	Direction
1	PSCL	Fuser Unit Serial Clock	IN
2	FSDA	Fuser Unit Serial Data	I/O
3	E2PWR	EEPROM Power	IN
4	+5VGND	Ground	–
5	OSRSTS	Op1 Supply Roller Status	OUT
6	FSRNOT	Fuser Not Sensor	OUT

CN602

Pin No.	Signal Name	Description	Direction
1	OSRSTS	Op1 Supply Roller Status	IN
2	+5VGND	Ground	–

Paper Feeder Unit Board

CN604

Pin No.	Signal Name	Description	Direction
1	MPPKUP	MPT Pick Up Solenoid	OUT
2	MPA	MPT Resist Motor Pulse	IN
3	MPPSEN	MPT Paper Detect	IN
4	MPNA	MPT Resist Motor Pulse	IN
5	REGSEN	Registration Sensor	IN
6	MPB	MPT Resist Motor Pulse	IN
7	+5V	+5V	IN
8	MPNB	MPT Resist Motor Pulse	IN
9	+5VGND	Ground	–
10	PFUNOT	PFU Not Sensor	OUT
11	TRRPS	Transfer Roller Sensor	OUT
12	UPNOT	ST. Paper Not Sensor	OUT
13	+24V	+24V	IN
14	REGCTL	Registration Control	IN
15	+24VGND	Ground	–
16	TRUDCTL	Transfer Roller Solenoid Control	IN
17	FG	Ground	–
18	UPUCTL	Pick Up Solenoid Control	IN
19	FG	Ground	–
20	N.C	Not Connected	–

CN605

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	$\overline{\text{REGCTL}}$	Registration Control	OUT

CN606

Pin No.	Signal Name	Description	Direction
1	+24V	+24V	OUT
2	+24V	+24V	OUT
3	$\overline{\text{MPA}}$	MPT Resist Motor Pulse	OUT
4	$\overline{\text{MPNA}}$	MPT Resist Motor Pulse	OUT
5	$\overline{\text{MPB}}$	MPT Resist Motor Pulse	OUT
6	$\overline{\text{MPNB}}$	MPT Resist Motor Pulse	OUT

CN607

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	OUT
2	+5VGND	Ground	–
3	REGSEN	Registration Sensor	IN
4	MPPSEN	MPT Paper Detect	IN

FG601

Pin No.	Signal Name	Description	Direction
1	FG	Ground	–

Paper Feeder Sensor Board

CN608

Pin No.	Signal Name	Description	Direction
1	MPPSEN	MPT Paper Detect	OUT
2	REGSEN	Registration Sensor	OUT
3	+5VGND	Ground	–
4	+5V	+5V	IN

Fuser Exit Sensor Board

CN610

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	IN
2	+5VGND	Ground	–
3	EXITSEN1	Exit Sensor 1	OUT

Exit Sensor Board

CN611

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	EXITSEN2	Exit Sensor 2	OUT
3	EXITSEN1	Exit Sensor 1	OUT
4	+5V	+5V	IN
5	SOLPWR	Solenoid Power	IN
6	$\overline{\text{FUDCTL}}$	Face Up Down Control	IN
7	N.C	Not Connected	–

CN613

Pin No.	Signal Name	Description	Direction
1	$\overline{\text{FUDCTL}}$	Face Up Down Control	OUT
2	SOLPWR	Solenoid Power	OUT

CN614

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	OUT
2	+5VGND	Ground	–
3	EXITSEN1	Exit Sensor 1	IN

Toner Cartridge Movement Sensor Board

CN615

Pin No.	Signal Name	Description	Direction
1	BCMPS	Black Cam Motor Sensor	OUT
2	YCMPS	Yellow Cam Motor Sensor	OUT
3	MCMPS	Magenta Cam Motor Sensor	OUT
4	CCMPS	Cyan Cam Motor Sensor	OUT
5	+5VGND	Ground	–
6	+5V	+5V	IN

DEV Cam Motor

CN616

Pin No.	Signal Name	Description	Direction
1	$\overline{\text{BCMCTL}}$	Black Cam Motor Control	IN
2	$\overline{\text{YCMCTL}}$	Yellow Cam Motor Control	IN
3	$\overline{\text{MCMCTL}}$	Magenta Cam Motor Control	IN
4	$\overline{\text{CCMCTL}}$	Cyan Cam Motor Control	IN
5	+24V	+24V	IN

Exit Tray Full Sensor

CN617

Pin No.	Signal Name	Description	Direction
1	PIPWR3	Sensor Power	IN
2	+5VGND	Ground	–
3	EXITFULL	Exit Full Sensor	OUT

IT Cleaning Board

CN618

Pin No.	Signal Name	Description	Direction
1	CLBPS	Cleaning Blade Sensor	OUT
2	+5VGND	Ground	–
3	PIPWR1	PI Sensor Power	IN
4	$\overline{\text{CLBCTL}}$	Cleaning Blade Control	IN
5	+24V	+24V	IN

Toner Cartridge Level Sensor (Receive) and Roller Clutch Board

CN619

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	BTEOUT	Black Toner Empty Sensor	OUT
3	YTEOUT	Yellow Toner Empty Sensor	OUT
4	MTEOUT	Magenta Toner Empty Sensor	OUT
5	CTEOUT	Cyan Toner Empty Sensor	OUT
6	$\overline{\mathrm{CSLVCTL}}$	Cyan Sleeve Clutch Control	IN
7	$\overline{\mathrm{YSLVCTL}}$	Yellow Sleeve Clutch Control	IN
8	+24V	+24V	IN
9	$\overline{\mathrm{BSLVCTL}}$	Black Sleeve Clutch Control	IN
10	$\overline{\mathrm{MSLVCTL}}$	Magenta Sleeve Clutch Control	IN

CN620

Pin No.	Signal Name	Description	Direction
1	$\overline{\mathrm{BSLVCTL}}$	Black Sleeve Clutch Control	OUT
2	+24V	+24V	OUT

CN621

Pin No.	Signal Name	Description	Direction
1	$\overline{\mathrm{YSLVCTL}}$	Yellow Sleeve Clutch Control	OUT
2	+24V	+24V	OUT

CN622

Pin No.	Signal Name	Description	Direction
1	$\overline{\mathrm{MSLVCTL}}$	Magenta Sleeve Clutch Control	OUT
2	+24V	+24V	OUT

CN623

Pin No.	Signal Name	Description	Direction
1	$\overline{\mathrm{CSLVCTL}}$	Cyan Sleeve Clutch Control	OUT
2	+24V	+24V	OUT

Toner Cartridge (Transmitter) Level Sensor Board

CN629

Pin No.	Signal Name	Description	Direction
1	CTECTL	Cyan Toner Empty Control	IN
2	MTECTL	Magenta Toner Empty Control	IN
3	YTECTL	Yellow Toner Empty Control	IN
4	BTECLT	Black Toner Empty Control	IN
5	+5V	+5V	IN
6	+5VGND	Ground	–

Pre-exposure Erase Lamp Board

CN630

Pin No.	Signal Name	Description	Direction
1	N.C	Not Connected	–
2	+24V	+24V	IN
3	$\overline{\mathrm{ERSCTL}}$	Erase LED Control	IN
4	N.C	Not Connected	–

PTL Board

CN631

Pin No.	Signal Name	Description	Direction
1	N.C	Not Connected	–
2	$\overline{\mathrm{PTLCTL}}$	PTL Control	IN
3	+24V	+24V	IN
4	N.C	Not Connected	–

Accumulator Belt Position Sensor Board

CN632

Pin No.	Signal Name	Description	Direction
1	+5V	+5V	IN
2	+5VGND	Ground	–
3	$\overline{\mathrm{HPS}}$	Accumulator Belt Home Sensor	OUT

Tray Sensor Board Paper Tray Switches
CN633

Pin No.	Signal Name	Description	Direction
1	+5VGND	Ground	–
2	UPSZ0	Paper Cassette Size Switch	OUT
3	UPSZ1	Paper Cassette Size Switch	OUT
4	UPSZ2	Paper Cassette Size Switch	OUT

OPS Memory Board (OPC Home Sensor)
CN628

Pin No.	Signal Name	Description	Direction
1	PSDA	Imaging Unit Serial Data	I/O
2	PSCL	Imaging Unit Serial Clock	IN
3	E2PWR	EEPROM Power	IN
4	OPC-S	OPC Home Sensor	OUT
5	+5VGND	Ground	–

7. Adjustment

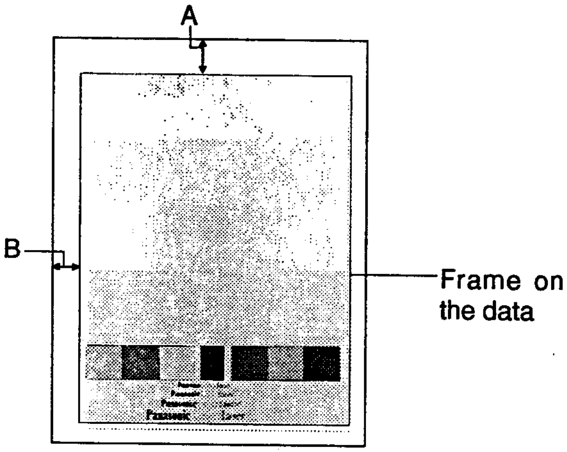
7.1 Print Position Calibration

This adjustment is used to set the top calibration after replacing the engine control board or LSU.

1. Open data included in the Service Diskette (PJWX?PS8KM) on the PC, then send it to the printer as a test print.
2. Verify that A and B match the values in the following table.

Paper Size	
A 4	A=5mm ±0.8mm B=4.7mm ±0.8mm
Letter	A=5.5mm ±0.8mm B=3.6mm ±0.8mm

If necessary, adjust as follows.



7.1.1 Top Calibration

1. Select "Setting" on the Service Mode and press the ENTER button.
2. Select "Calibration Setting" and press the ENTER button.
3. Select "Top Calibration" and press the ENTER button.
4. Change the data using △ or ◁button.

   A press of △ button moves the top print position by 0.04 mm. The movable distance is up to 48 mm.
5. Press the ENTER button to save the change.

7.1.2 Left Calibration

1. Select "Setting" on the Service Mode and press the ENTER button.
2. Select "Calibration Setting" and press the ENTER button.
3. Select "Left Calibration" and press the ENTER button.
4. Change the data using △ or ◁ button.

   A press of △ button moves the left print position by 0.17 mm. The movable distance is up to 40 mm.
5. Press the ENTER button to save the change.

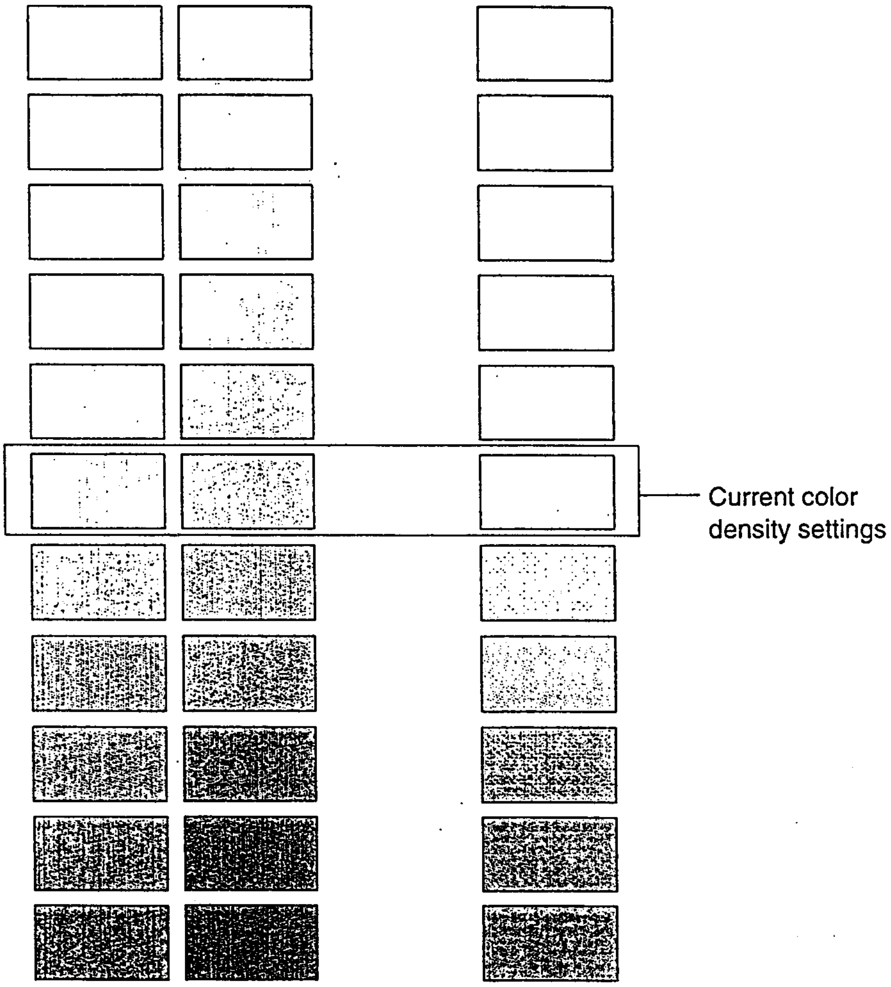
7.2 Color Density Adjustment

This adjustment is used to set the density of the toner applied to the media.

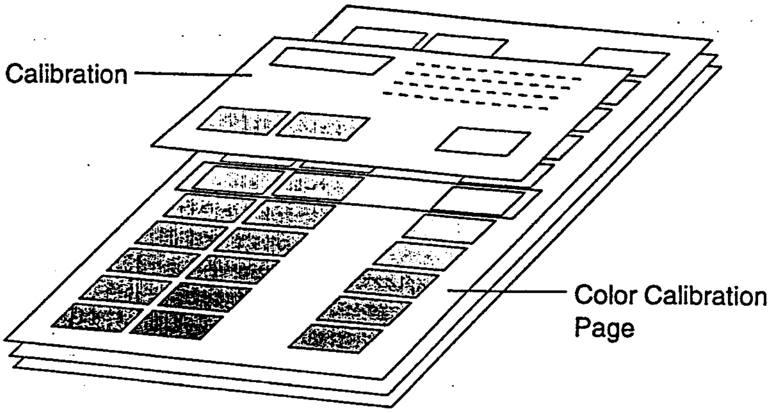
1. Print a Color Calibration Page using the Calibration Test Print menu in the Menu mode (see section 3.1.2). The current density setting for each color is indicated by the line enclosure on the Color Calibration Page as shown in the following example.
   The factory default setting for each color density is 0.

Color Calibration Page (Example)

Color Calibration Page (Example):



2. Compare the current color density settings on the Color Calibration Page with the color density samples on the Color Calibration Card to see if they match.
   Place the Color Calibration Page on at least 2 sheets of clean white paper in a well-lighted area.



- If they match, then the color density adjustment is not needed and any operation can be performed.
- If they do not match go to step 3.

3. Determine which block on the Color Calibration Page most closely matches the density of the cyan sample on the Color Calibration Card.
   Repeat step 3 for each color.

4. To adjust the density for all colors simultaneously, perform the following.
   a. Select "Calibration Offset" and press the ENTER button.
   b. Press the △/◁ button to darken/lighten all the colors, then press the ENTER button.
   c. Select "Calibration Test Print" to reprint the Color Calibration Page.

5. To adjust the density for each color independently, perform the following.
   a. Select "Color Calibration" and press the △ button.
   b. Select "CYAN" and press the ENTER button.
   c. Press the △/◁ button to darken/lighten the cyan color, then press the ENTER button.
   d. Repeat instructions b and c for each color (MAGENTA, YELLOW, BLACK).
   e. Select "Calibration Test Print" to reprint the Color Calibration Page.
   The line enclosure reflects the changes made to the settings.

Notes:

- The color density setting affects the average life of toner.
- Save the Color Calibration Card for future calibrations.

8. Preventative Maintenance

8.1 General

Regularly scheduled cleaning is not necessary for this printer. However, if the printer experiences frequent media jams, clean the pickup rollers.

8.2 Recommended Tools

The Following tools are recommended.

1. Toner Vacuum Cleaner
2. Suction Bulb (air blower)
3. Cleaning water
4. Lint-free wipes
5. Cotton swabs
6. Imaging unit cover
7. Isopropyl alcohol (greater than 90% pure)

8.3 Recommended Cleaning

When performing maintenance, clean the inside of the printer according to the following.

1. Turn off the printer.
2. Remove the imaging unit.
   <<Note>>
   Whenever the imaging unit is removed, always keep it covered to prevent damage from light shock.
   Do not touch the OPC belt or accumulator belt.
3. Remove the toner cartridges, the fuser and the media tray.
4. Slide out the paper feeder.
5. Clean the accumulator belt home position sensor with a dry cotton swab.
6. Clean all printer rollers, except the second bias transfer roller, with alcohol-dampened wipes only. Never apply alcohol on the second bias transfer roller.
7. Clean the laser window with puffs of air from the suction bulb.
   Alternately, the window can be vacuumed clean.
8. Wipe off the pre-exposure lamp bezel and the pre-transfer lamp bezel with a lint-free wipe.
9. Vacuum the interior of the printer.
10. Carefully clean the area surrounding the second bias transfer for impacted toner.
    a. Remove the second bias transfer roller.
    b. Tap on the cleaning roller cover to knock the toner loose from that area.
    c. Vacuum the toner.

8.4 Maintenance Tables

8.4.1 User Maintenance

The following table lists the user replaceable components and the symptoms that may result when they need to be replaced.

Printer Component	Front Panel Message	Average Life*	Symptom
Toner Cartridges	"Low <Color> Toner" Change the color toner cartridge soon. "<Color> Toner Empty" Change the color toner cartridge now.	10 K pages (CMY)**	Uneven, streaky or mottled color Faded or missing color in a single color. One or more straight and even, vertical, light or dark streaks in one color.
	"Low Black Toner" Change the black toner cartridge soon. "Black Toner Empty" Change the black toner cartridge now.	12 K pages (Black)**	Uneven, streaky or mottled color Faded or missing color in a single color. One or more straight and even, vertical, light or dark streaks in one color.
Color Imaging Unit	"Imaging Unit wearing out" Change the Imaging unit soon.	Monochrome 57 K pages or Color 14.25 K pages	Dark vertical streaks on the print Dark color spots and streaks in all colors. A wide, light, horizontal band in one place on the page All colors are faded; fine line detail disappears.
	"Imaging Unit Worn out" Change the Imaging unit now.	Monochrome 60 K pages or Color 15 K pages	
Fuser Unit***	"Fuser Unit wearing out" "Oil Roll wearing out" (These messages are displayed alternately.) Change the Fuser unit soon.	28.5 K pages	—
	"Fuser Unit and Oil Roll Worn out" Change the Fuser unit now.	31 K pages	
Oil Supply Roll	"Oil Roll wearing out" Change the Oil supply roll soon.	15 K pages	—
	"Oil Roll Worn out" Change the Oil supply now.	15.5 K pages	
Transfer Unit	"Transfer wearing out" Change the Transfer unit soon.	80 K pages	—

Notes : * These figures are based on an average of 5% coverage of the printable area and standard density for any one color.
The frequency of replacement will vary, depending on the complexity of the prints and the percentage of coverage and print density.
When printing at the High Density, after "Low <Color> Toner" or "Low Black Toner" is displayed, a faded print may occur before "<Color> Toner Empty" or "Black Toner Empty" is displayed.

** The starter cartridges shipped with the printer have an average life of approximately 3,000 pages, based on an average of 5% coverage.

*** Transparencies, coated paper and other specialty media will result in shortened consumable life. Replace the oil supply roll along with the fuser unit. Do not use the old one.

8.4.2 Service Maintenance

8.4.2.1 Recommended Maintenance Cycle

Item	Maintenance Cycle	Type of Maintenance
Paper Feed Unit Pickup Roller Paper Feed Roller	approximately 40,000 pages	Clean
Imaging Unit Charge Corona*	approximately 10,000 full color pages or approximately 40,000 images	Clean
Main Unit Belt Home Sensor** Pre-exposure Lamp bezel** Pre-transfer Lamp bezel**	approximately 15,000 full color pages or approximately 60,000 images	Clean

* The charge corona is housed within the imaging unit. Under normal operation the charge corona may require cleaning only once during the life of the imaging unit.
Use a cotton swab to clean the tungsten wire that runs the length of the charge corona.

** Cleaning is recommended when replacing the imaging unit.

8.4.2.2 Lubrication

Lubricate the following parts when they are replaced or cleaned:

Area	Part	Lublicant part number	Type of lublicant
Paper Feeder	Gear Shafts	PJOL-K1879	Grease
Toner Cartridge Selector	Cam Gears and Cam Shafts	PJOL-PG671	Grease
Toner Cartridge Drive Unit	Gears Bias Plate (A)	PJOL-SG3451 PJOL-GE676	Grease Grease*
Main Chassis	Gears and Gear Shafts STR HV Terminal Gear Shafts	PJOL-HP500 PJOL-GE676 PJOL-SG3451	Grease Grease* Grease

* Electrically conductive grease

Refer to the parts list illustrations for the locations to be lubricated.

9 Troubleshooting

9.1 Self-Diagnostic Codes

The printer indicates error conditions using the ON and blinking states of the ERROR indicator. When the ERROR indicator is lit in red, it shows call service error status. When it is blinking, it shows user correctable error status.

9.1.1 User Errors

LCD Display	Possible Cause	Recovery
Front or Right door Open	Front or right side door is open.	Close the front or right side door.
Left side door Open	Left side door is open.	Close the left side door.
Lower Left side door Open	Optional cassette side door is open.	Close the optional cassette side door.
Upper Left side door Open	Standard cassette side door is open.	Close the left side door.
Black Toner Cartridge Not installed	Black toner cartridge is not installed.	Install the black toner cartridge.
Cyan Toner Cartridge Not installed	Cyan toner cartridge is not installed.	Install the cyan toner cartridge.
Magenta Toner Cartridge Not installed	Magenta toner cartridge is not installed.	Install the magenta toner cartridge.
Yellow Toner Cartridge Not installed	Yellow toner cartridge is not installed.	Install the yellow toner cartridge.
Imaging Unit Not installed	Imaging unit is not installed.	Install the imaging unit.
Fuser Unit Not installed	Fuser unit is not installed.	Install the fuser unit.
Paper feeder Not installed	Paper feeder is not installed.	Install the paper feeder.
Oil Roll Not installed	Oil supply roll is not installed.	Install the oil supply roll.
Imaging Unit No tension	Imaging unit is not installed correctly.	Install the imaging unit correctly.
Charger Not installed	Charger is not installed.	Install the charger.
All Media Tray missing or empty	All media trays are missing or empty.	Install a media tray with media in it.
Media Tray Empty	Media tray is missing or empty.	Install the media tray with media in it.
Upper Tray Empty	Media tray is empty.	Install media in the upper media tray.
Middle Tray Empty	Middle tray is empty in the 2nd cassette feeder option.	Install the media in the middle media tray.
Lower Tray Empty	Lower tray is empty in the 2nd cassette feeder option.	Install the media in the lower media tray.
Multi-Purpose Tray Empty	Multi-purpose tray is empty.	Install media in the multi-purpose tray.
Paper Tray Empty	No media tray is installed or media tray is empty.	Install a media tray with paper in it.
Transparency Tray Empty	No media tray is installed or media tray is empty.	Install a media tray with transparencies in it.
Output Tray Full	Output tray is full.	Remove the printed media from the output tray.
SIMM Check Error	Controller Optional SIMM check error.	Call for service
SCSI error	Communication cannot be established between the scanner and the commputer.	Connect the SCSI cable correctly.
Ethernet Card Check Error	Printer Ethernet Card I/F Error.	Install the Ethernet Card correctly.
Imaging Unit Worn out	Imaging unit is worn out.	Replace the imaging unit now.
Imaging Unit wearing out	Imaging unit is wearing out.	Replace the imaging unit soon.
Transfer wearing out	Second transfer roller is wearing out.	Replace the transfer roller soon.

LCD Display	Possible Cause	Recovery
Fuser Unit and Oil Roll Worn out	Fuser is worn out.	Replace the fuser unit now.
Fuser Unit wearing out	Fuser is wearing out.	Replace the fuser unit soon.
Oil Roll Worn out	Oil supply roll is worn out.	Replace the oil supply roll now.
Oil Roll wearing out	Oil supply roll is wearing out.	Replace the oil supply roll soon.
Black Toner Empty	Black toner cartridge is empty.	Replace the balck toner cartridge now.
Cyan Toner Empty	Cyan toner cartridge is empty.	Replace the cyan toner cartridge now.
Magenta Toner Empty	Magenta toner cartridge is empty.	Replace the magenta toner cartridge now.
Yellow Toner Empty	Yellow toner cartridge is empty.	Replace the yellow toner cartridge now.
Low Black Toner	Black toner cartridge is almost empty.	Replace the balck toner cartridge soon.
Low Cyan Toner	Cyan toner cartridge is almost empty.	Replace the cyan toner cartridge soon.
Low Magenta Toner	Magenta toner cartridge is almost empty.	Replace the magenta toner cartridge soon.
Low Yellow Toner	Yellow toner cartridge is almost empty.	Replace the yellow toner cartridge soon.
Too hot to print Label Remove Label, Cancel job	Printer is too hot or room temperature is too high to print Labels.	Wait until the printer cools down, or use in a cooler place [below 32.5°C (90.5°F)].

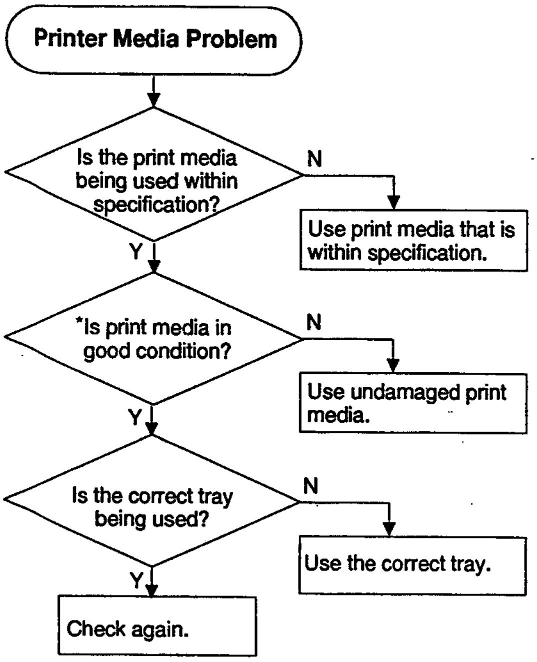
9.1.2 Call Service Codes

LCD Display	Printer Status	Possible Cause	Recovery
Printer Error 01	The dev. unit did not reach contact position or home position within 1 sec.	Black developing unit movement error	See Section 9.4.1.
Printer Error 02	The dev. unit did not reach contact position or home position within 1 sec.	Cyan developing unit movement error	See Section 9.4.1.
Printer Error 03	The dev. unit did not reach contact position or home position within 1 sec.	Magenta developing unit movement error	See Section 9.4.1.
Printer Error 04	The dev. unit did not reach contact position or home position within 1 sec.	Yellow developing unit movement error	See Section 9.4.1.
Printer Error 05	Fuser/Toner Cartridge fan is not rotating at normal speed.	Fuser/Toner Cartridge fan error	See Section 9.4.2.
Printer Error 10	Scanner motor is not phase-locked and is not rotating at normal speed.	Laser scanner motor unlocked	See Section 9.4.3.
Printer Error 12	L-Sync signal is not detected after APC.	L-Sync over	See Section 9.4.3.
Printer Error 13	L-Sync signal is detected within correct time.	L-Sync short	See Section 9.4.3.
Printer Error 20	1. Main charger Arc discharge of contact has occurred. 2. FEV,FTR,STR bias Short circuit of contact voltage has occurred.	Charger error	See Section 9.4.4.
Printer Error 21	OPC home number and IT home number are not synchronous.	OPC asynchronous with intermediate transfer unit	See Section 9.4.5.
Printer Error 22	OPC home is not detected within 4.5 sec. during rotation of main motor.	Position error of the OPC unit	See Section 9.4.6.
Printer Error 30	IT home is not detected within 0.7 sec. during rotation of main motor.	Position error of the intermediate transfer unit	See Section 9.4.7.
Printer Error 32	The cleaning blade did not reached to non-cleaning position or cleaning position within 0.7 sec.	Cleaning blade movement error	See Section 9.4.8.
Printer Error 33	The media transfer roller did not reach to transfer position or home position within 0.9 sec.	Media transfer roller movement error	See Section 9.4.9.
Printer Error 41	Fuser temperature is over 210°C.	High temperature error	See Section 9.4.10.
Printer Error 42	Fuser thermistor is disconnected.	Thermistor open error	See Section 9.4.11.
Printer Error 43	Fuser temperature does not reach 100°C within 200sec,160℃ within 500sec during warming up,or it is less than 120℃ during standby, and it does not return set temperature within 100sec after a low temperature error occurred during printing.	Temperature rising error	See Section 9.4.12.
Printer Error 50	Power supply fan is not rotating at normal speed.	Power supply fan error	See Section 9.4.13.
Printer Error 51	Ozone fan is not rotating at normal speed.	Ozone fan error	See Section 9.4.14.
Printer Error 61	Toner Cartridge Drive motor (sleeve motor) is not phase-locked and is not rotating at normal speed.	Toner Cartridge Drive motor (sleeve motor) unlocked	See Section 9.4.15.
Printer Error 62	Paper feed motor is not phase-locked and is not rotating at normal speed.	Paper feed motor unlocked	See Section 9.4.16.
Printer Error 63	Main motor is not phase-locked and is not rotating at normal speed.	Main motor unlocked	See Section 9.4.17.

LCD Display	Printer Status	Possible Cause	Recovery
Printer Error 64	Multi-Purpose Pickup Roller movement error occured	Multi-Purpose Pickup Roller movement error	See Section 9.4.18.
Printer Error 70	Engine Program ROM checksum error	Engine Program ROM checksum error	See Section 9.4.19.
Printer Error 71	Engine S-RAM check error	Engine S-RAM check error	See Section 9.4.20.
Printer Error 72	Engine EEPROM check error. Printing is continued.	Engine EEPROM check error	See Section 9.4.21.
Printer Error 73	Ilegal parity error occurs or no response comes back from engine.	Engine communication Error	See Section 9.4.22.
Printer Error 74	VIDEO VSZ or VCLK signal is not detected.	VSYNC time-out	See Section 9.4.23.
Printer Error 75	VIDEO PPRDY signal is not detected within 800ms, when ESM signal turned on.	Power missing error	See Section 9.4.24.
Printer Error 76	EEPROM (CIK unit) check error	EEPROM (CIK unit) Error	See Section 9.4.25.
Printer Error 77	EEPROM (Fuser unit) check error	EEPROM (Fuser unit) Error	See Section 9.4.26.
Printer Error 80	Controller program ROM checksum error has occurred at power on	Controller Program ROM checksum error	See Section 9.4.27.
Printer Error 81	Controller work RAM check error has occurred at power on	Controller work RAM check error	See Section 9.4.28.
Printer Error 87	Controller ASIC# 2 Error	Controller ASIC# 2 Error	See Section 9.4.29.
Printer Error 88	Controller ASIC# 3 Error	Controller ASIC# 3 Error	See Section 9.4.30.
Printer Error 90	Read/Write error of controller EEPROM has occurred. Printing is continued.	Controller EEPROM check error	See Section 9.4.31.
Printer Error 91	Controller CPU Error.	Controller CPU error	See Section 9.4.32.
Printer Error 92	Printer SCSI controller (53cf96) Error.	Printer SCSI controller (53cf96) Error	See Section 9.4.33.
Printer Error 94	Printer parallel I/F controller (cd1283) Error	Printer parallel I/F controller (cd1283) Error	See Section 9.4.34.
Printer Error 95	Printer Panel Error	Printer Panel Error	See Section 9.4.35.
Ethernet Card	Ethernet Card I/F Error	Ethernet Card I/F Error	See Section 9.4.37.
Optional SIMM	Controller Optional SIMM check error has occurred at power on	Controller Optional SIMM check error	
Standard SIMM	Controller Standard SIMM check error has occurred at power on	Controller Standard SIMM check error	

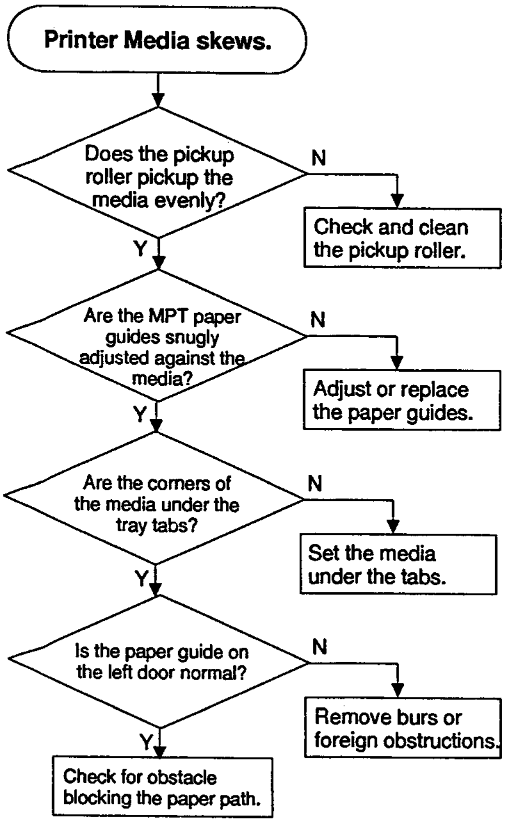
9.2 Jam

9.2.1 Print Media Problem

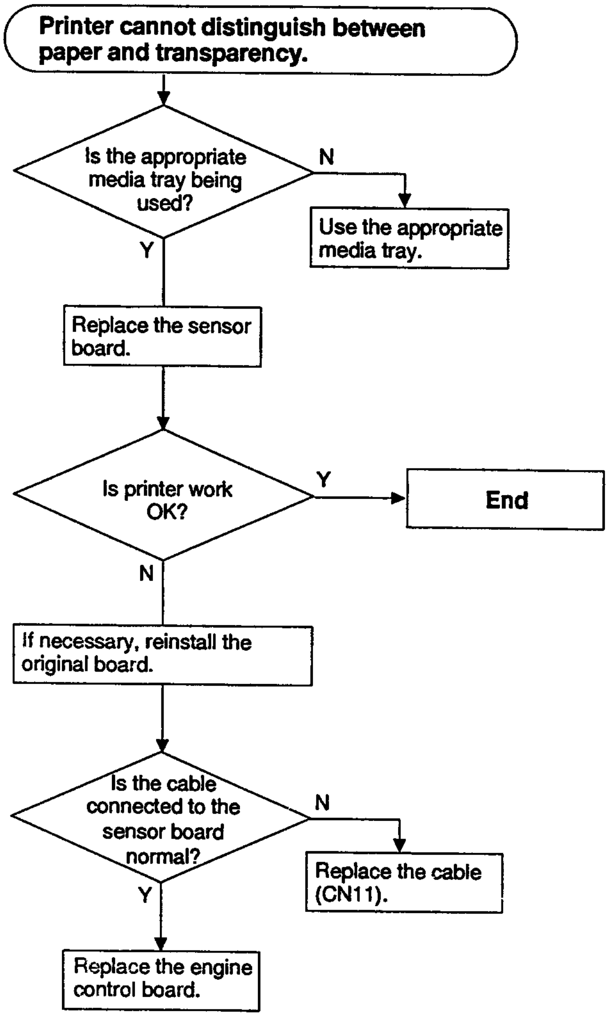

Printer Media Problem
Is the print media being used within specification?
N
Use print media that is within specification.
Y
*Is print media in good condition?
N
Use undamaged print media.
Y
Is the correct tray being used?
N
Use the correct tray.
Y
Check again.

*Inspect the print media for bent, torn or folded corners etc.

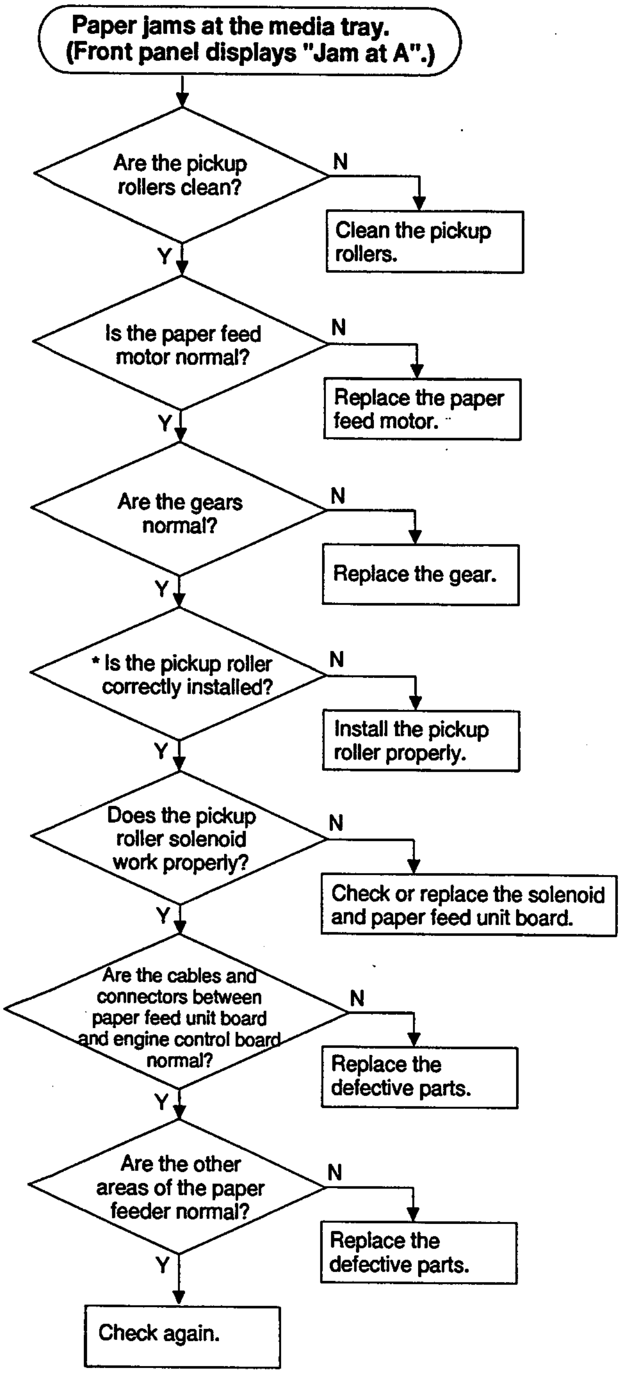
9.2.2 Print Media skews.


Printer Media skews.
Does the pickup roller pickup the media evenly?
N
Check and clean the pickup roller.
Y
Are the MPT paper guides snugly adjusted against the media?
N
Adjust or replace the paper guides.
Y
Are the corners of the media under the tray tabs?
N
Set the media under the tabs.
Y
Is the paper guide on the left door normal?
N
Remove burs or foreign obstructions.
Y
Check for obstacle blocking the paper path.

9.2.3 Printer cannot distinguish between paper and transparency.

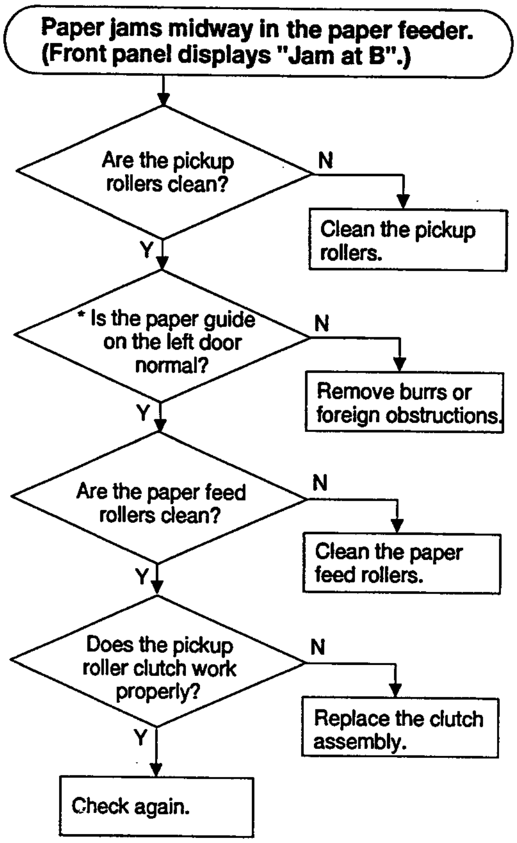

Printer cannot distinguish between paper and transparency.
Is the appropriate media tray being used?
N
Use the appropriate media tray.
Y
Replace the sensor board.
Is printer work OK?
Y
End
N
If necessary, reinstall the original board.
Is the cable connected to the sensor board normal?
N
Replace the cable (CN11).
Y
Replace the engine control board.

9.2.4 Paper jams at the media tray.


Paper jams at the media tray.
(Front panel displays "Jam at A".)
Are the pickup rollers clean?
N
Clean the pickup rollers.
Y
Is the paper feed motor normal?
N
Replace the paper feed motor.
Y
Are the gears normal?
N
Replace the gear.
Y
* Is the pickup roller correctly installed?
N
Install the pickup roller properly.
Y
Does the pickup roller solenoid work properly?
N
Check or replace the solenoid and paper feed unit board.
Y
Are the cables and connectors between paper feed unit board and engine control board normal?
N
Replace the defective parts.
Y
Are the other areas of the paper feeder normal?
N
Replace the defective parts.
Y
Check again.

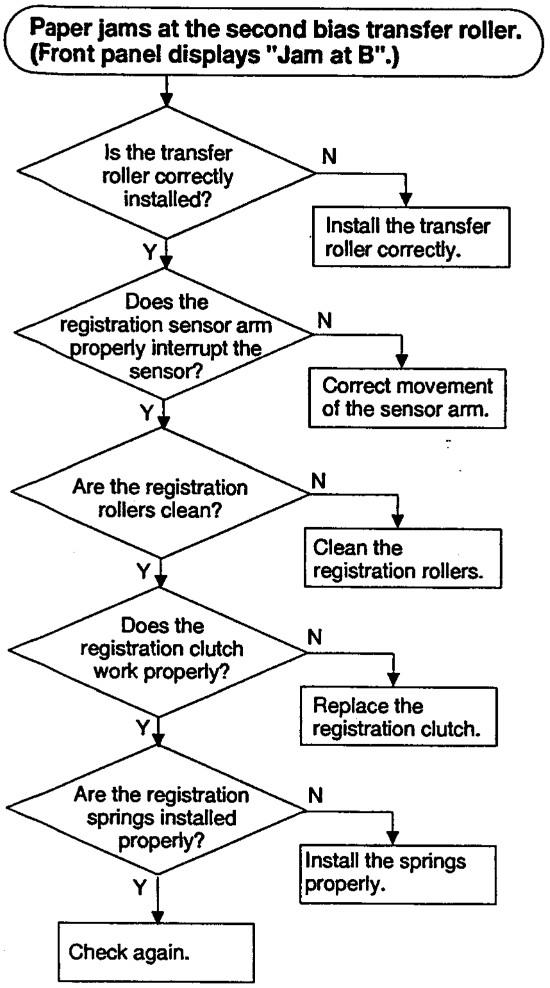
* Flat side of the cam-shaped pickup rollers face down prior to pick a sheet of paper.

9.2.5 Paper jams midway in the paper feeder.

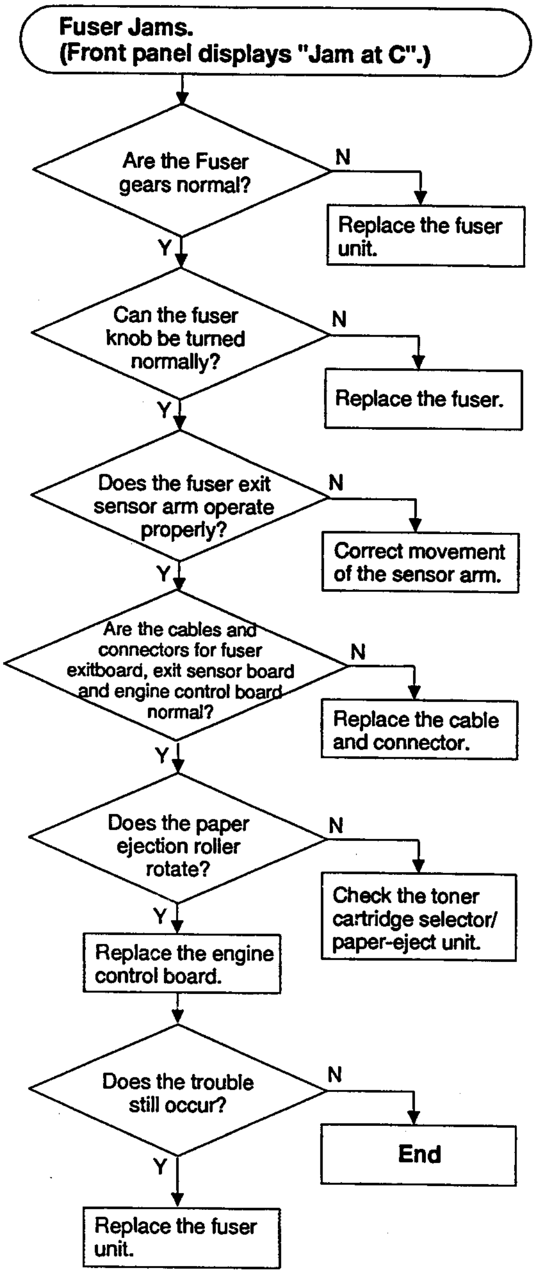

Paper jams midway in the paper feeder.
(Front panel displays "Jam at B".)
Are the pickup rollers clean?
N
Clean the pickup rollers.
Y
* Is the paper guide on the left door normal?
N
Remove burrs or foreign obstructions.
Y
Are the paper feed rollers clean?
N
Clean the paper feed rollers.
Y
Does the pickup roller clutch work properly?
N
Replace the clutch assembly.
Y
Check again.

*Check for burrs or foreign obstructions.

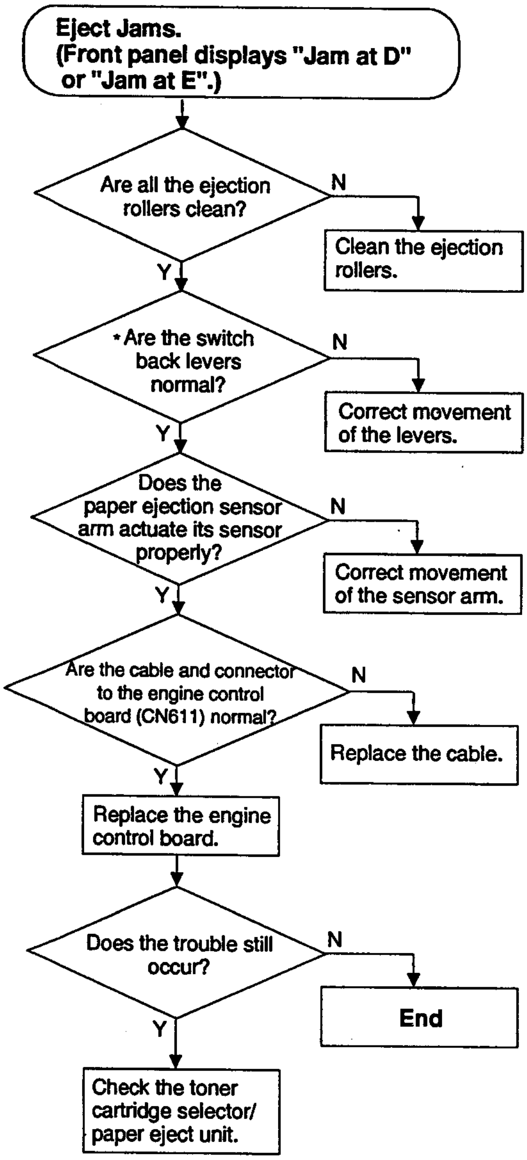
9.2.6 Paper jams at the second bias transfer roller.


Paper jams at the second bias transfer roller.
(Front panel displays "Jam at B".)
Is the transfer roller correctly installed?
N
Install the transfer roller correctly.
Y
Does the registration sensor arm properly interrupt the sensor?
N
Correct movement of the sensor arm.
Y
Are the registration rollers clean?
N
Clean the registration rollers.
Y
Does the registration clutch work properly?
N
Replace the registration clutch.
Y
Are the registration springs installed properly?
N
Install the springs properly.
Y
Check again.

9.2.7 Fuser Jams

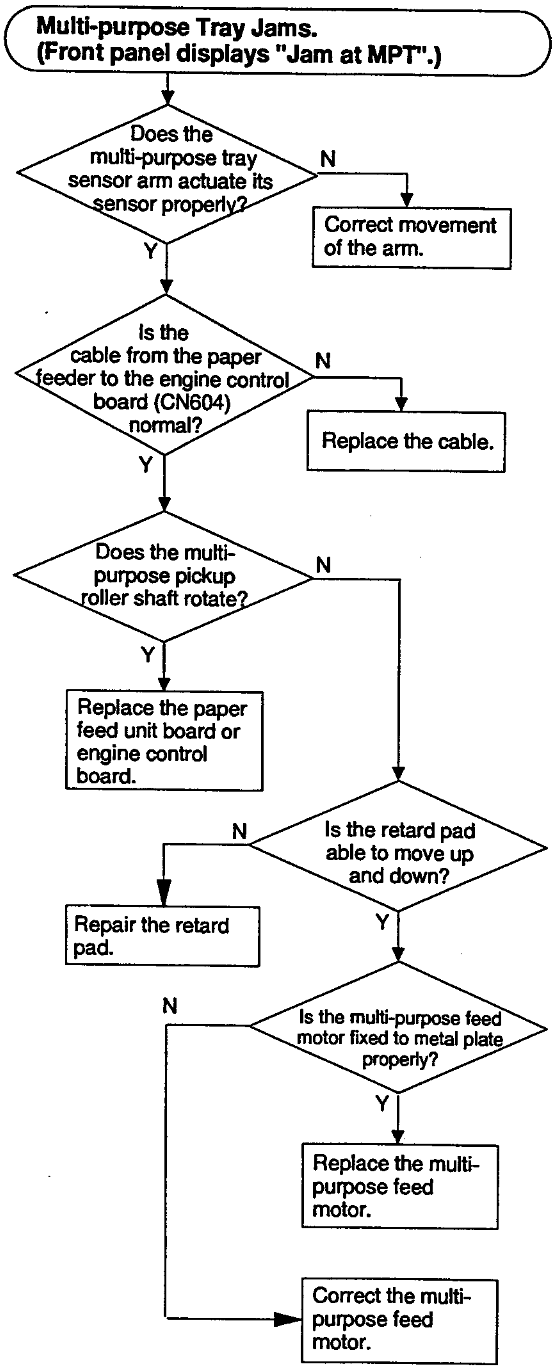

Fuser Jams.
(Front panel displays "Jam at C".)
Are the Fuser gears normal?
N
Replace the fuser unit.
Y
Can the fuser knob be turned normally?
N
Replace the fuser.
Y
Does the fuser exit sensor arm operate properly?
N
Correct movement of the sensor arm.
Y
Are the cables and connectors for fuser exitboard, exit sensor board and engine control board normal?
N
Replace the cable and connector.
Y
Does the paper ejection roller rotate?
N
Check the toner cartridge selector/ paper-eject unit.
Y
Replace the engine control board.
Does the trouble still occur?
N
End
Y
Replace the fuser unit.

9.2.8 Eject Jams


Eject Jams.
(Front panel displays "Jam at D" or "Jam at E".)
Are all the ejection rollers clean?
N
Clean the ejection rollers.
Y
*Are the switch back levers normal?
N
Correct movement of the levers.
Y
Does the paper ejection sensor arm actuate its sensor properly?
N
Correct movement of the sensor arm.
Y
Are the cable and connector to the engine control board (CN611) normal?
N
Replace the cable.
Y
Replace the engine control board.
Does the trouble still occur?
N
End
Y
Check the toner cartridge selector/ paper eject unit.

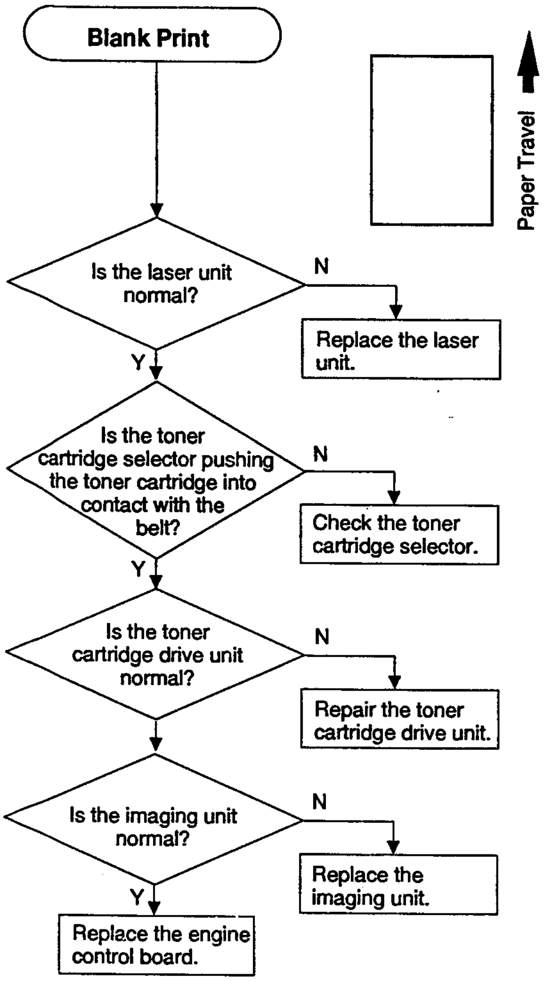
* Ensure that the levers are not bent and do not interfere with paper movement.

9.2.9 Multi-purpose Tray Jams

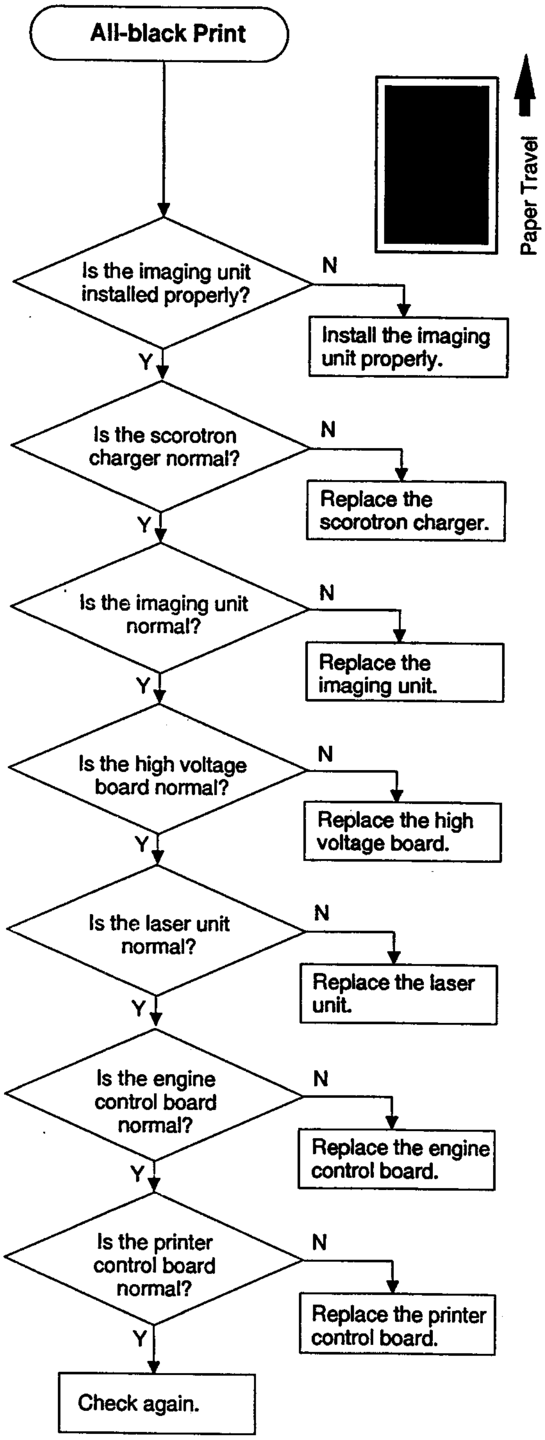

Multi-purpose Tray Jams.
(Front panel displays "Jam at MPT".)
Does the multi-purpose tray sensor arm actuate its sensor properly?
N
Correct movement of the arm.
Y
Is the cable from the paper feeder to the engine control board (CN604) normal?
N
Replace the cable.
Y
Does the multi-purpose pickup roller shaft rotate?
N
Y
Replace the paper feed unit board or engine control board.
Is the retard pad able to move up and down?
N
Repair the retard pad.
Y
Is the multi-purpose feed motor fixed to metal plate properly?
N
Y
Replace the multi-purpose feed motor.
Correct the multi-purpose feed motor.

9.3 Print Quality

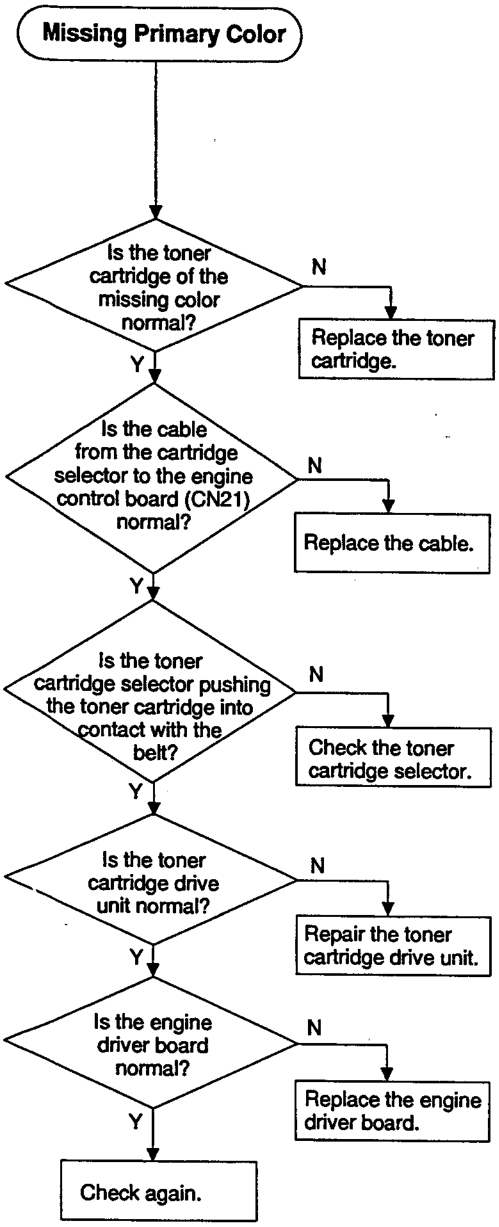
9.3.1 Blank Print


Blank Print
Paper Travel
Is the laser unit normal?
N
Replace the laser unit.
Y
Is the toner cartridge selector pushing the toner cartridge into contact with the belt?
N
Check the toner cartridge selector.
Y
Is the toner cartridge drive unit normal?
N
Repair the toner cartridge drive unit.
Is the imaging unit normal?
N
Replace the imaging unit.
Y
Replace the engine control board.

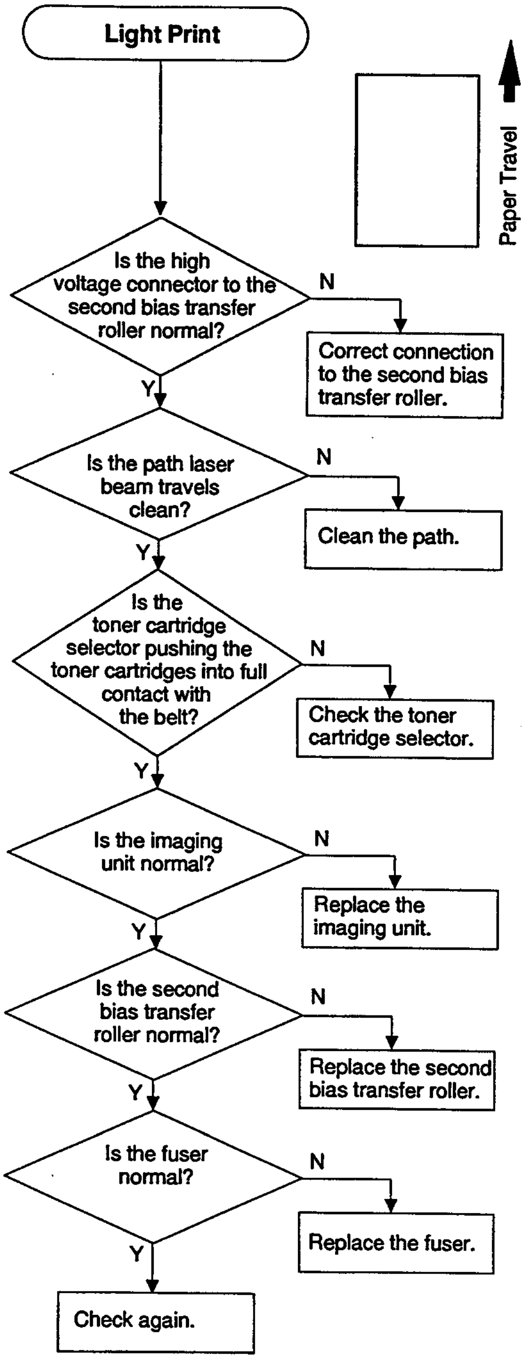
9.3.2 All-black Print


All-black Print
Paper Travel
Is the imaging unit installed properly?
N
Install the imaging unit properly.
Y
Is the scorotron charger normal?
N
Replace the scorotron charger.
Y
Is the imaging unit normal?
N
Replace the imaging unit.
Y
Is the high voltage board normal?
N
Replace the high voltage board.
Y
Is the laser unit normal?
N
Replace the laser unit.
Y
Is the engine control board normal?
N
Replace the engine control board.
Y
Is the printer control board normal?
N
Replace the printer control board.
Y
Check again.

9.3.3 Missing Primary Color


Missing Primary Color
Is the toner cartridge of the missing color normal?
N
Replace the toner cartridge.
Y
Is the cable from the cartridge selector to the engine control board (CN21) normal?
N
Replace the cable.
Y
Is the toner cartridge selector pushing the toner cartridge into contact with the belt?
N
Check the toner cartridge selector.
Y
Is the toner cartridge drive unit normal?
N
Repair the toner cartridge drive unit.
Y
Is the engine driver board normal?
N
Replace the engine driver board.
Y
Check again.

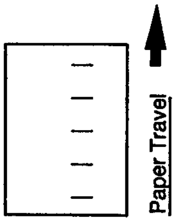
9.3.4 Light Print


Light Print
Paper Travel
Is the high voltage connector to the second bias transfer roller normal?
N
Correct connection to the second bias transfer roller.
Y
Is the path laser beam travels clean?
N
Clean the path.
Y
Is the toner cartridge selector pushing the toner cartridges into full contact with the belt?
N
Check the toner cartridge selector.
Y
Is the imaging unit normal?
N
Replace the imaging unit.
Y
Is the second bias transfer roller normal?
N
Replace the second bias transfer roller.
Y
Is the fuser normal?
N
Replace the fuser.
Y
Check again.

9.3.5 Repeated spots or lines on print in-line with each other.

Repeated spots or lines on print in-line with each other.

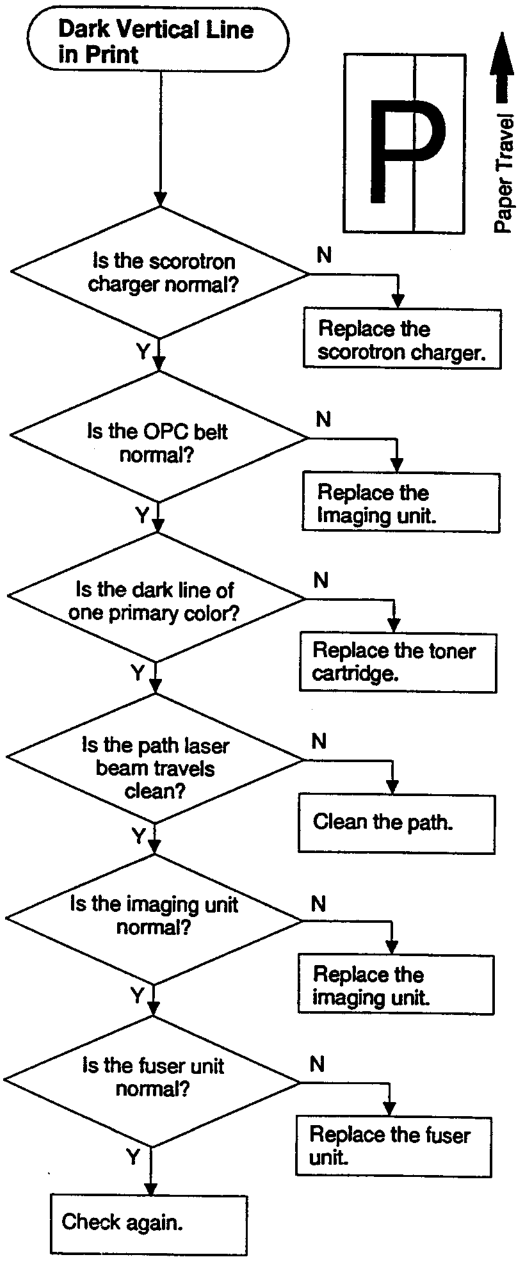
*Measure the spacing between the spots (or thin horizontal lines)


Paper Travel

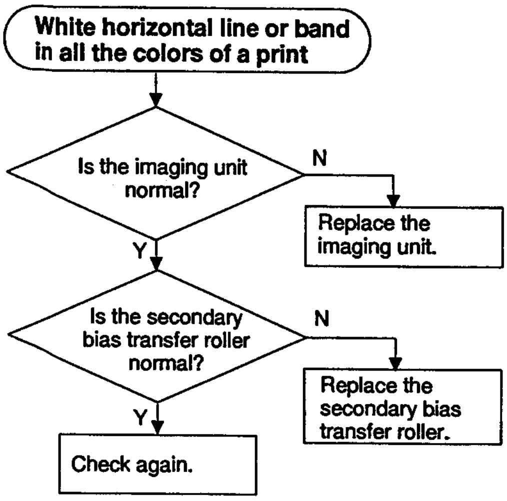
Space	Possible cause and remedy.
1.5 mm	Imaging unit gears poorly meshing. Replace the imaging unit.
26 mm (1200 dpi)	Replace the toner cartridge.
34 mm (600 dpi)	Replace the toner cartridge.
76 mm	Replace the second bias transfer roller.
94 mm	Imaging unit belt defect. Replace the imaging unit.
103 mm	Paper feeder drive gear broken tooth. Repair the paper feeder.
125 mm	Fuser roller defect. Replace the fuser.

* The distance between the repeating spots indicates the source of the problem. Thin horizontal lines, depending on problem, the distance between lines may range from 1.5mm between each line to 103mm between each line.

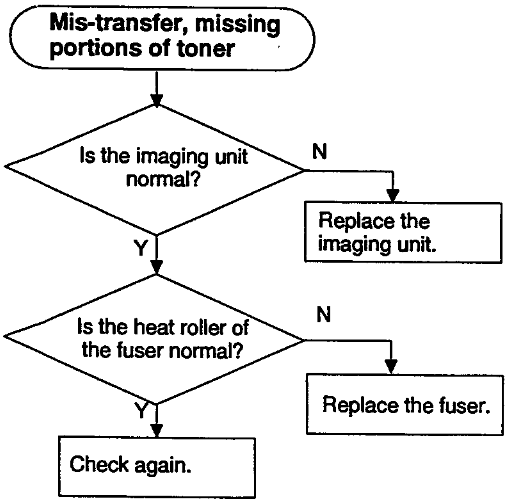
9.3.6 Dark Vertical Line in Print


Dark Vertical Line in Print
P
Paper Travel
Is the scorotron charger normal?
N
Replace the scorotron charger.
Y
Is the OPC belt normal?
N
Replace the Imaging unit.
Y
Is the dark line of one primary color?
N
Replace the toner cartridge.
Y
Is the path laser beam travels clean?
N
Clean the path.
Y
Is the imaging unit normal?
N
Replace the imaging unit.
Y
Is the fuser unit normal?
N
Replace the fuser unit.
Y
Check again.

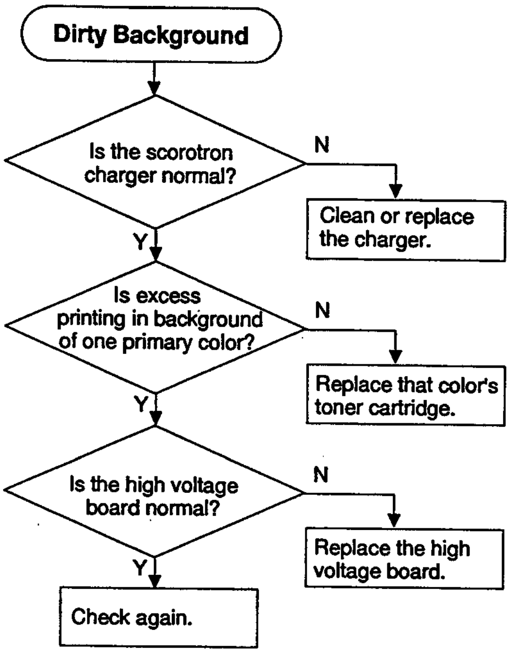
9.3.7 White horizontal line or band in all the colors of a print


White horizontal line or band in all the colors of a print
Is the imaging unit normal?
N
Replace the imaging unit.
Y
Is the secondary bias transfer roller normal?
N
Replace the secondary bias transfer roller.
Y
Check again.

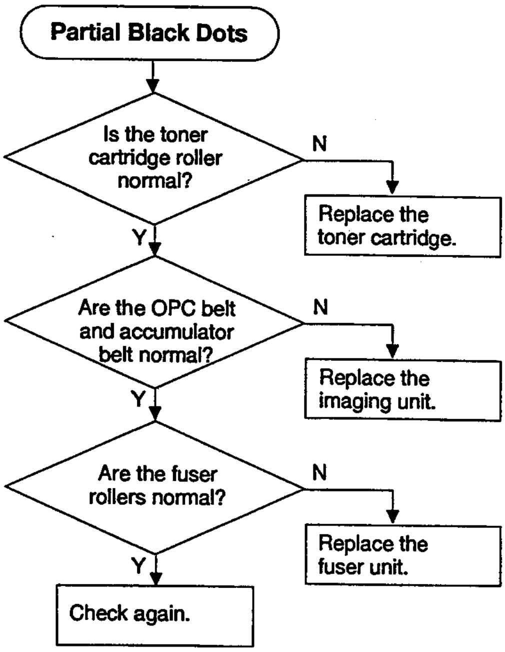
9.3.8 Mis-transfer, missing portions of toner


Mis-transfer, missing portions of toner
Is the imaging unit normal?
N
Replace the imaging unit.
Y
Is the heat roller of the fuser normal?
N
Replace the fuser.
Y
Check again.

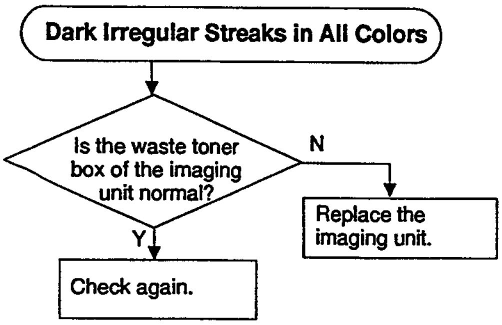
9.3.9 Dirty Background


Dirty Background
Is the scorotron charger normal?
N
Clean or replace the charger.
Y
Is excess printing in background of one primary color?
N
Replace that color's toner cartridge.
Y
Is the high voltage board normal?
N
Replace the high voltage board.
Y
Check again.

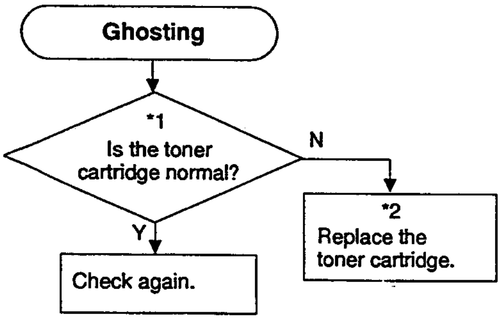
9.3.10 Partial Black Dots


Partial Black Dots
Is the toner cartridge roller normal?
N
Replace the toner cartridge.
Y
Are the OPC belt and accumulator belt normal?
N
Replace the imaging unit.
Y
Are the fuser rollers normal?
N
Replace the fuser unit.
Y
Check again.

9.3.11 Dark Irregular Streaks in All Colors


Dark Irregular Streaks in All Colors
Is the waste toner box of the imaging unit normal?
N
Replace the imaging unit.
Y
Check again.

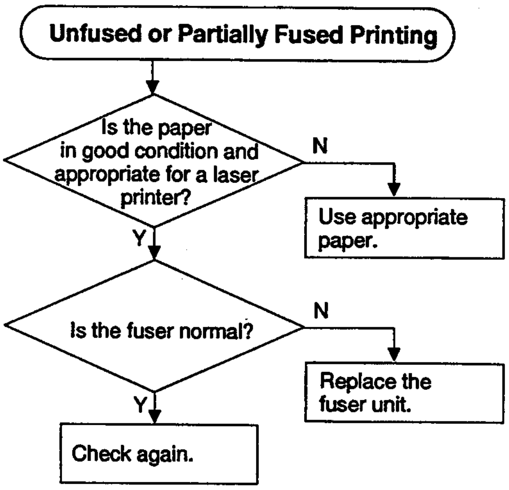
9.3.12 Ghosting


Ghosting
*1
Is the toner cartridge normal?
N
*2
Replace the toner cartridge.
Y
Check again.

*1 Ghosting with some images is unavoidable because of the color structure of the images. If a color is used at one part of the image area and the same color is used again at a later area, it is very possible to get ghosting of the first image into the second image area after one revolution of the toner cartridge developer roller. This occurs because the charge that is created from the first use of the color was not totally extinguished, a small residual charge remains associated with the color, resulting in the second use of the color to be darker in the same areas as the first image resulting in the first image ghosting into the second image when the same color issued.

*2 A new toner cartridge exhibits less ghosting. Ghosting increase as toner cartridges age.

9.3.13 Unfused or Partially Fused Printing


Unfused or Partially Fused Printing
Is the paper in good condition and appropriate for a laser printer?
N
Use appropriate paper.
Y
Is the fuser normal?
N
Replace the fuser unit.
Y
Check again.

9.3.14 Image is skewed on the paper.

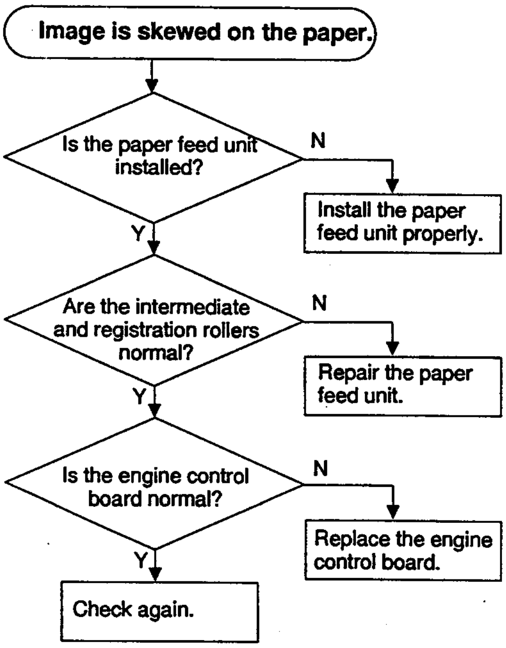
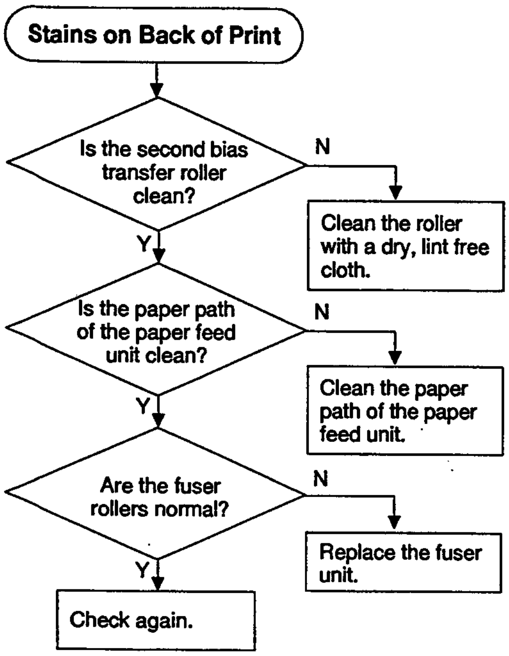
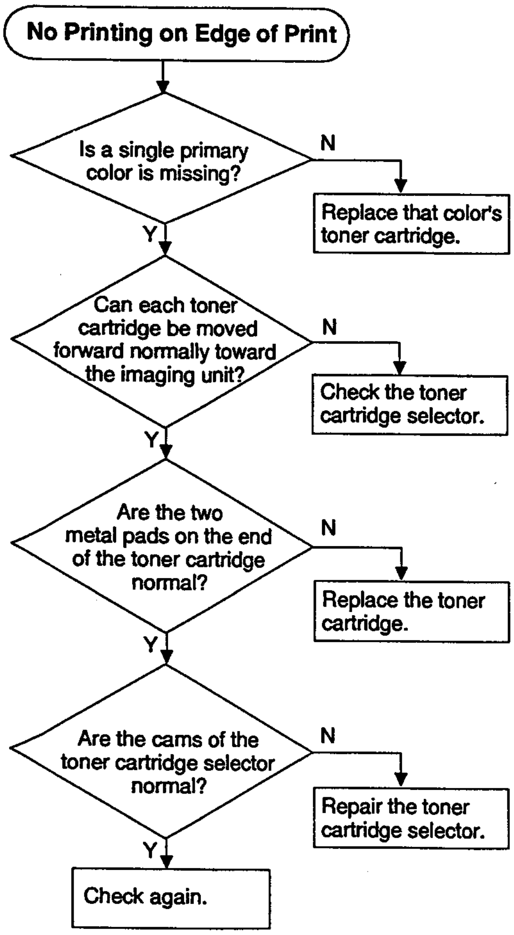


Image is skewed on the paper.
Is the paper feed unit installed?
N
Install the paper feed unit properly.
Y
Are the intermediate and registration rollers normal?
N
Repair the paper feed unit.
Y
Is the engine control board normal?
N
Replace the engine control board.
Y
Check again.

9.3.15 Stains on Back of Print


Stains on Back of Print
Is the second bias transfer roller clean?
N
Clean the roller with a dry, lint free cloth.
Y
Is the paper path of the paper feed unit clean?
N
Clean the paper path of the paper feed unit.
Y
Are the fuser rollers normal?
N
Replace the fuser unit.
Y
Check again.

9.3.16 No Printing on Edge of Print


No Printing on Edge of Print
Is a single primary color is missing?
N
Replace that color's toner cartridge.
Y
Can each toner cartridge be moved forward normally toward the imaging unit?
N
Check the toner cartridge selector.
Y
Are the two metal pads on the end of the toner cartridge normal?
N
Replace the toner cartridge.
Y
Are the cams of the toner cartridge selector normal?
N
Repair the toner cartridge selector.
Y
Check again.

9.3.17 Image is not centered on the print when it should be.

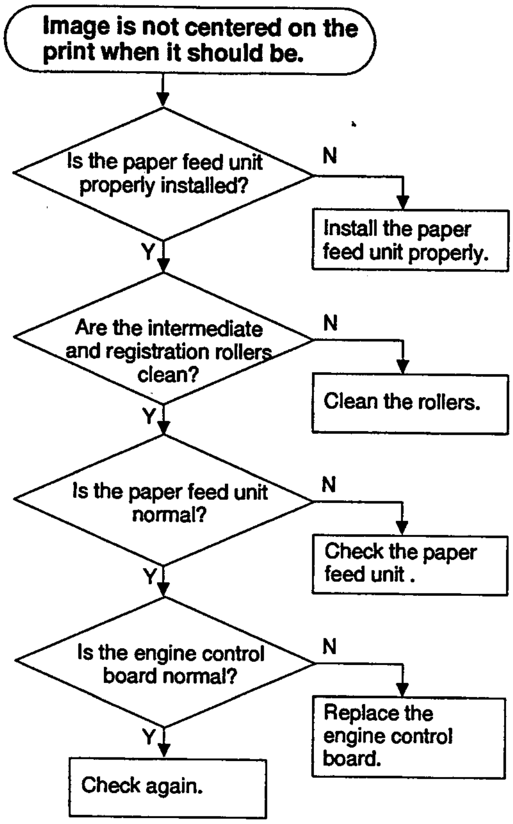
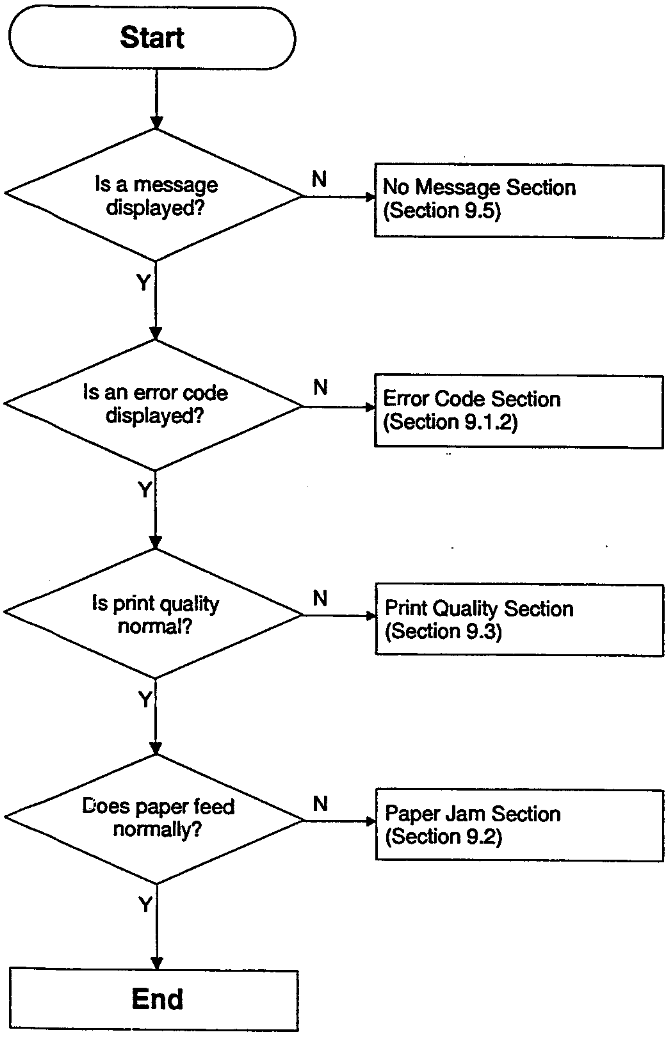


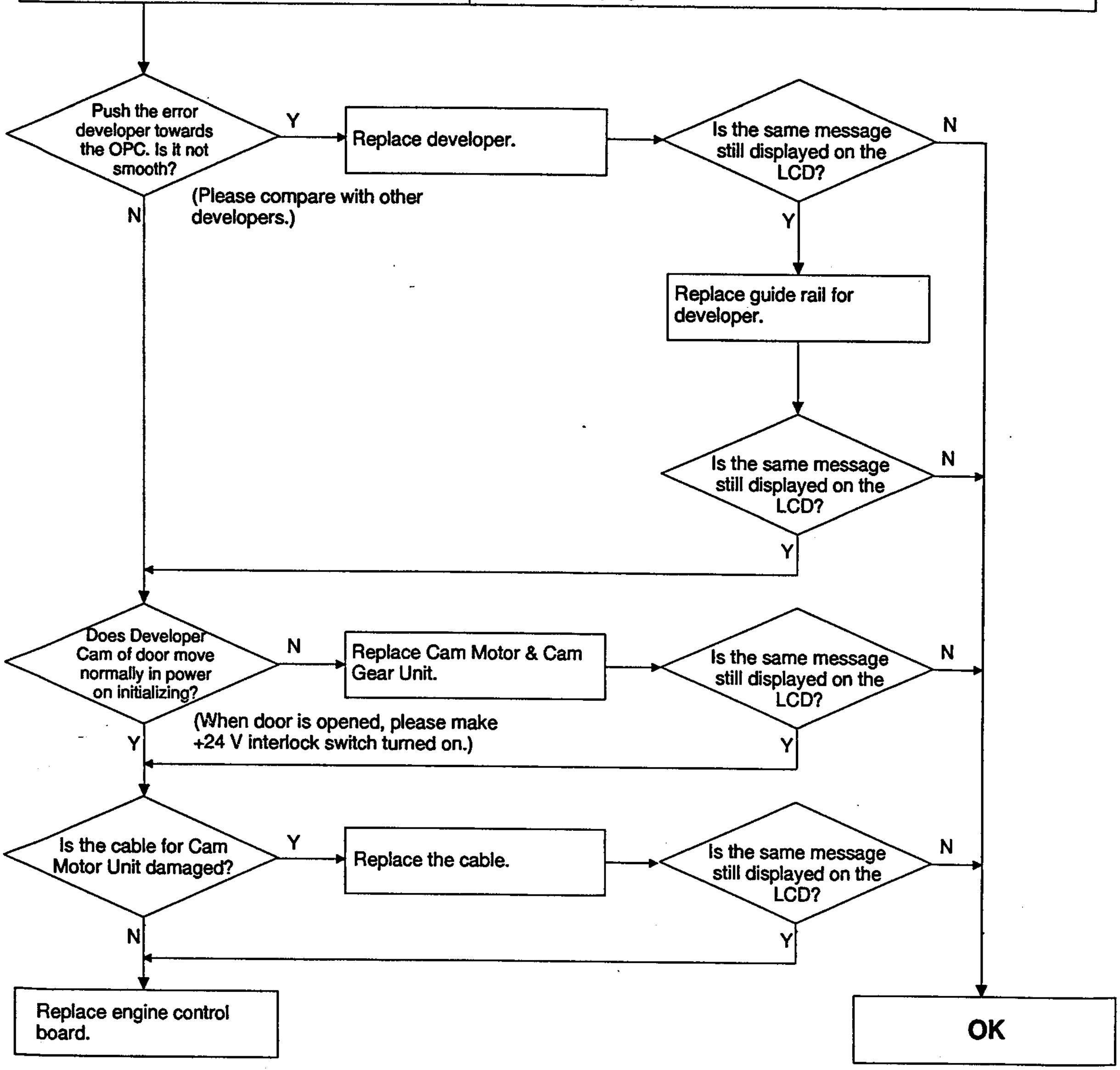
Image is not centered on the print when it should be.
Is the paper feed unit properly installed?
N
Install the paper feed unit properly.
Y
Are the intermediate and registration rollers clean?
N
Clean the rollers.
Y
Is the paper feed unit normal?
N
Check the paper feed unit.
Y
Is the engine control board normal?
N
Replace the engine control board.
Y
Check again.

9.4 Initial Troubleshooting Flowchart


Start
Is a message displayed?
N
No Message Section (Section 9.5)
Y
Is an error code displayed?
N
Error Code Section (Section 9.1.2)
Y
Is print quality normal?
N
Print Quality Section (Section 9.3)
Y
Does paper feed normally?
N
Paper Jam Section (Section 9.2)
Y
End

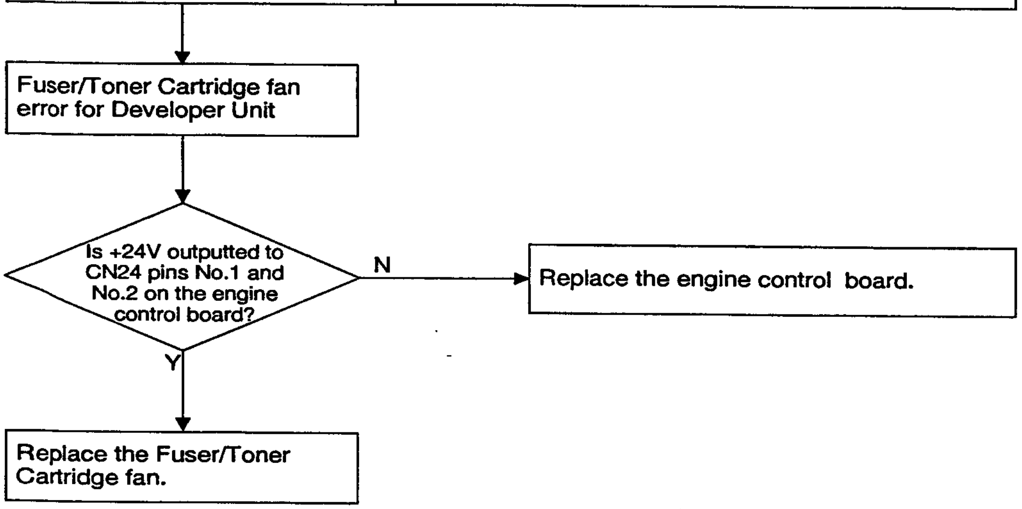
9.4.1 Printer Error 01 ~ 04

LCD Message	Possible Cause
Printer Error 01	Black developing unit movement error
Printer Error 02	Cyan developing unit movement error
Printer Error 03	Magenta developing unit movement error
Printer Error 04	Yellow developing unit movement error


Push the error developer towards the OPC. Is it not smooth?
Y
N
Replace developer.
(Please compare with other developers.)
Is the same message still displayed on the LCD?
N
Y
Replace guide rail for developer.
Is the same message still displayed on the LCD?
N
Y
Does Developer Cam of door move normally in power on initializing?
N
Y
Replace Cam Motor & Cam Gear Unit.
(When door is opened, please make +24 V interlock switch turned on.)
Is the same message still displayed on the LCD?
N
Y
Is the cable for Cam Motor Unit damaged?
Y
N
Replace the cable.
Is the same message still displayed on the LCD?
N
Y
Replace engine control board.
OK

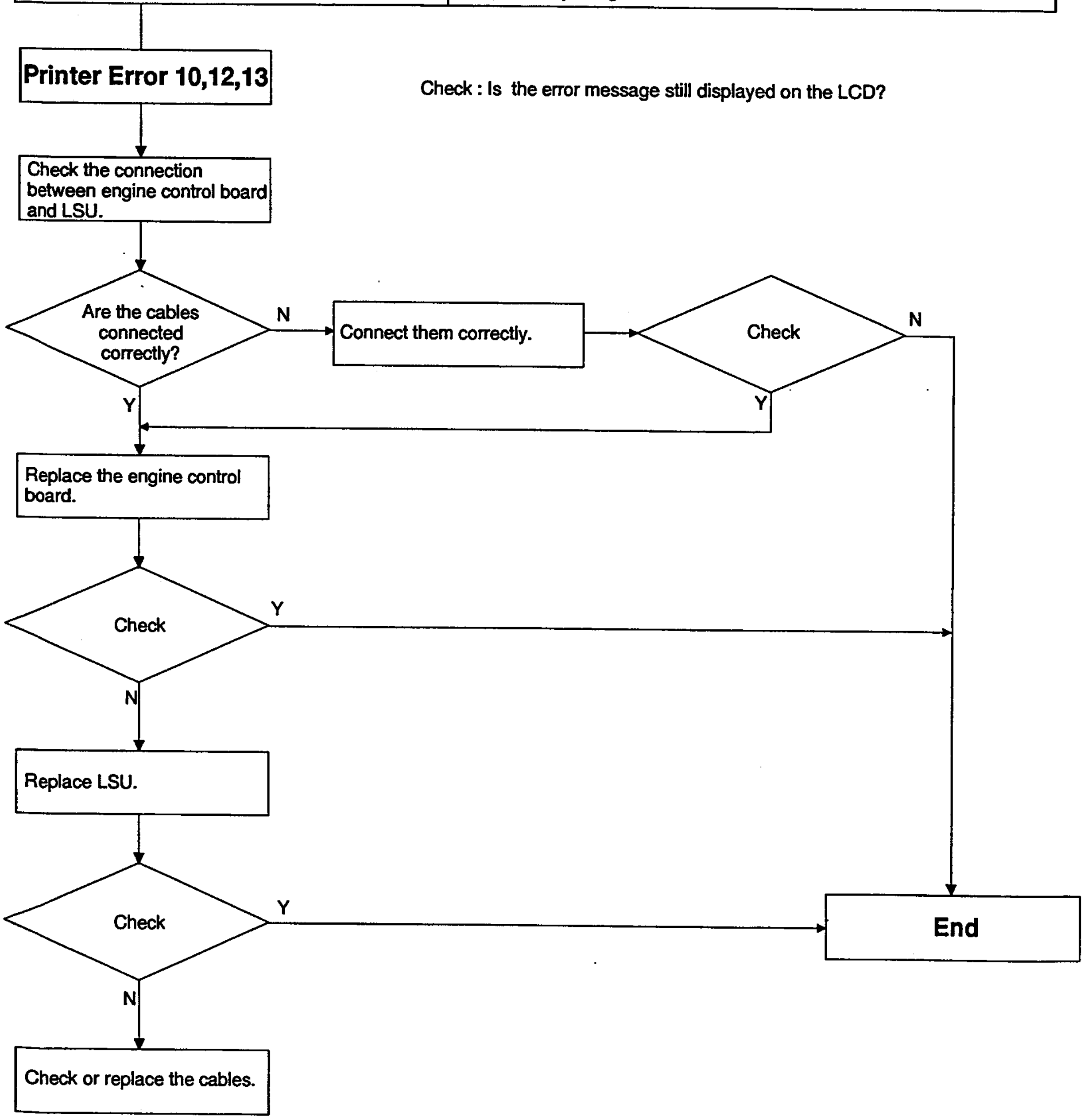
9.4.2 Printer Error 05

LCD Message	Possible Cause
Printer Error 05	Fuser/Toner Cartridge fan is not rotating at normal speed.


Fuser/Toner Cartridge fan error for Developer Unit
Is +24V outputted to CN24 pins No.1 and No.2 on the engine control board?
N
Replace the engine control board.
Y
Replace the Fuser/Toner Cartridge fan.

9.4.3 Printer Error 10, 12 and 13

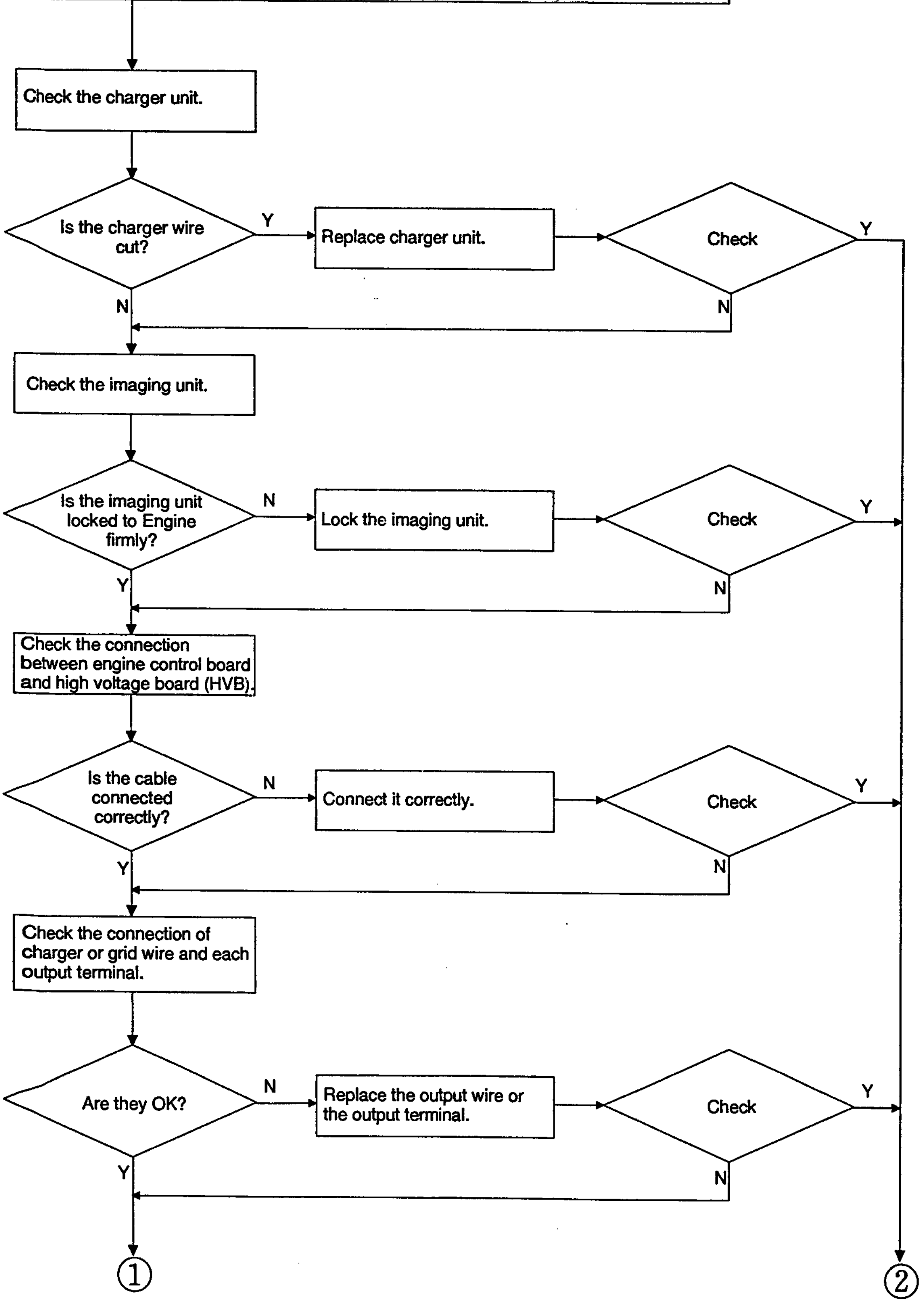
LCD Message	Possible Cause
Printer Error 10 Printer Error 12 Printer Error 13	Scanner motor is not phase-locked and is not rotating at normal speed. L-Sync Signal is not detected after APC. Irregular L-Sync signal is detected.

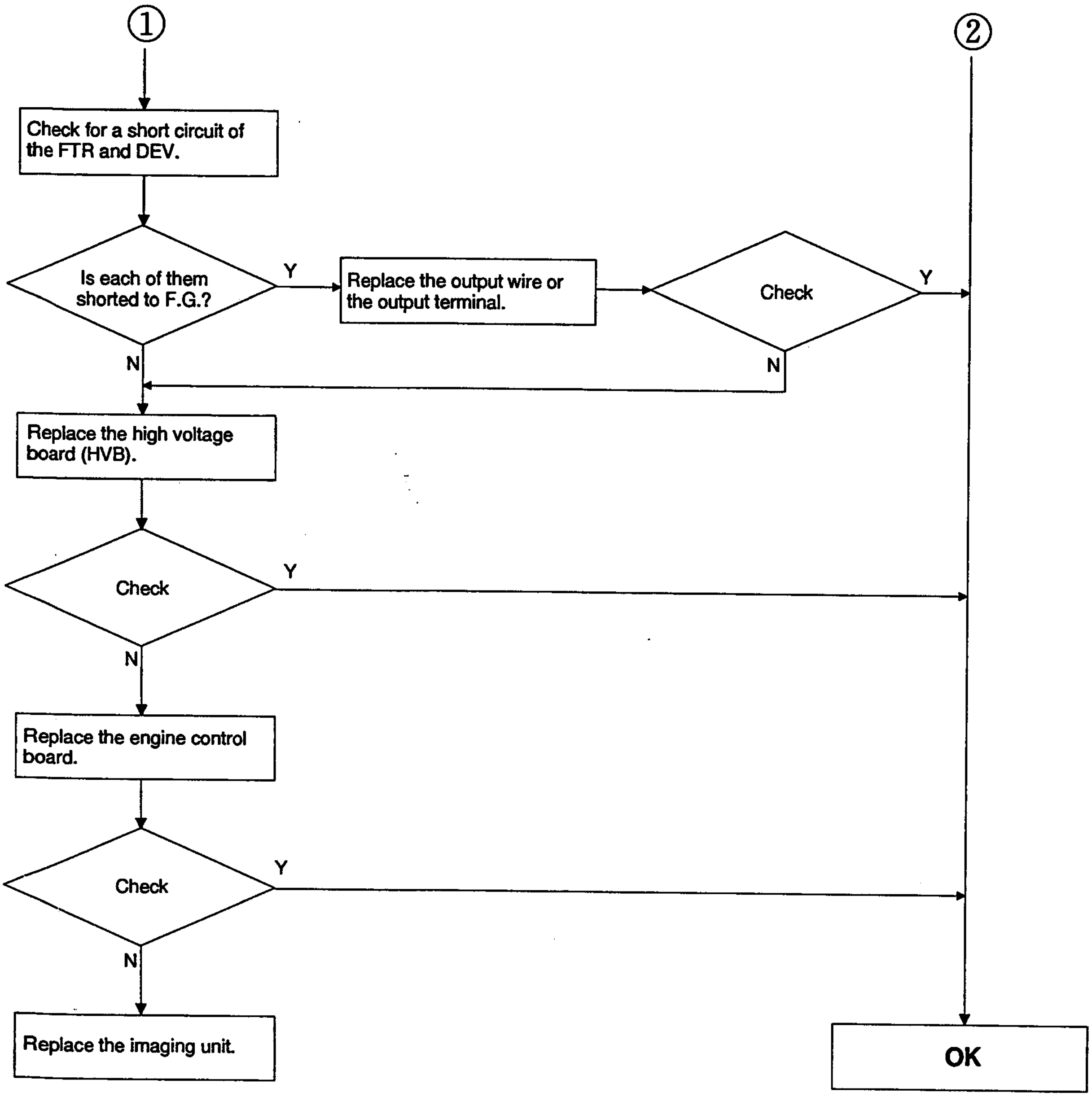

Printer Error 10,12,13
Check the connection between engine control board and LSU.
Are the cables connected correctly?
N
Connect them correctly.
Check
N
Y
Y
Replace the engine control board.
Check
Y
N
Replace LSU.
Check
Y
N
End
Check or replace the cables.

Check : Is the error message still displayed on the LCD?

9.4.4 Printer Error 20

LCD Message	Possible Cause
Printer Error 20	1.Abnormal spark discharge of Charger. 2.Short circuit of FTR or DEV output.

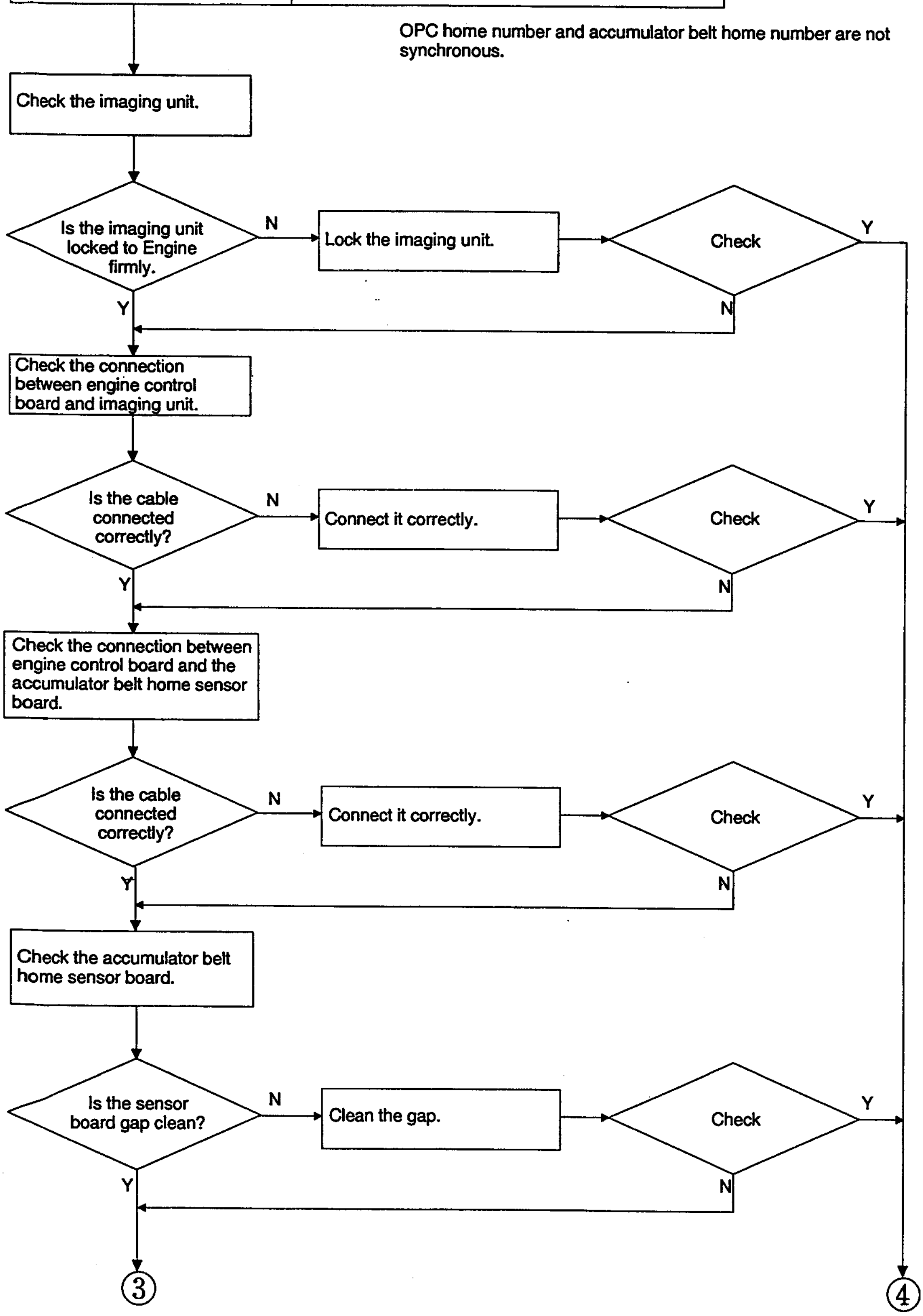

Check the charger unit.
Is the charger wire cut?
Y
Replace charger unit.
Check
Y
N
N
Check the imaging unit.
Is the imaging unit locked to Engine firmly?
N
Lock the imaging unit.
Check
Y
Y
N
Check the connection between engine control board and high voltage board (HVB).
Is the cable connected correctly?
N
Connect it correctly.
Check
Y
Y
N
Check the connection of charger or grid wire and each output terminal.
Are they OK?
N
Replace the output wire or the output terminal.
Check
Y
Y
N
①
②

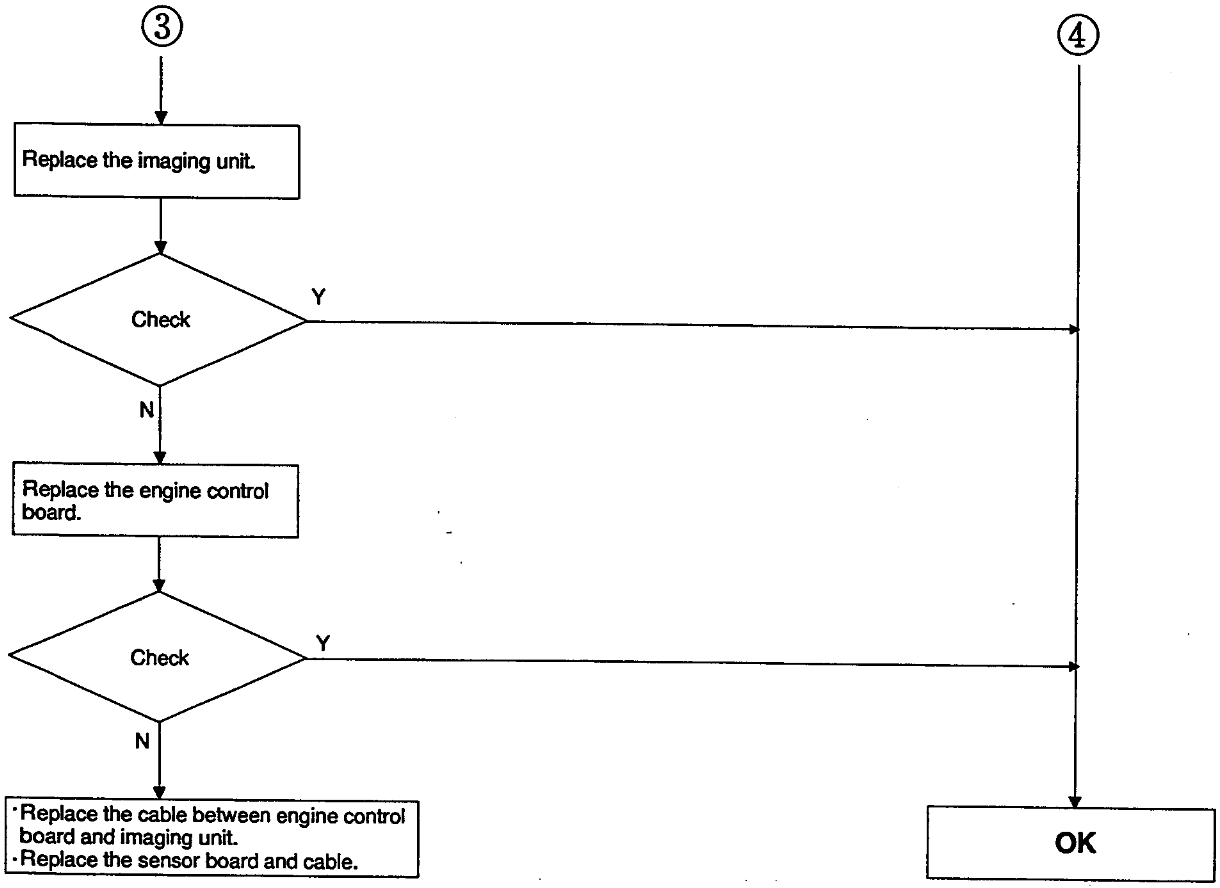

①
②
Check for a short circuit of the FTR and DEV.
Is each of them shorted to F.G.?
Y
Replace the output wire or the output terminal.
Check
Y
N
N
Replace the high voltage board (HVB).
Check
Y
N
Replace the engine control board.
Check
Y
N
Replace the imaging unit.
OK

9.4.5 Printer Error 21

LCD Message	Possible Cause
Printer Error 21	OPC asynchronous with accumulator belt.

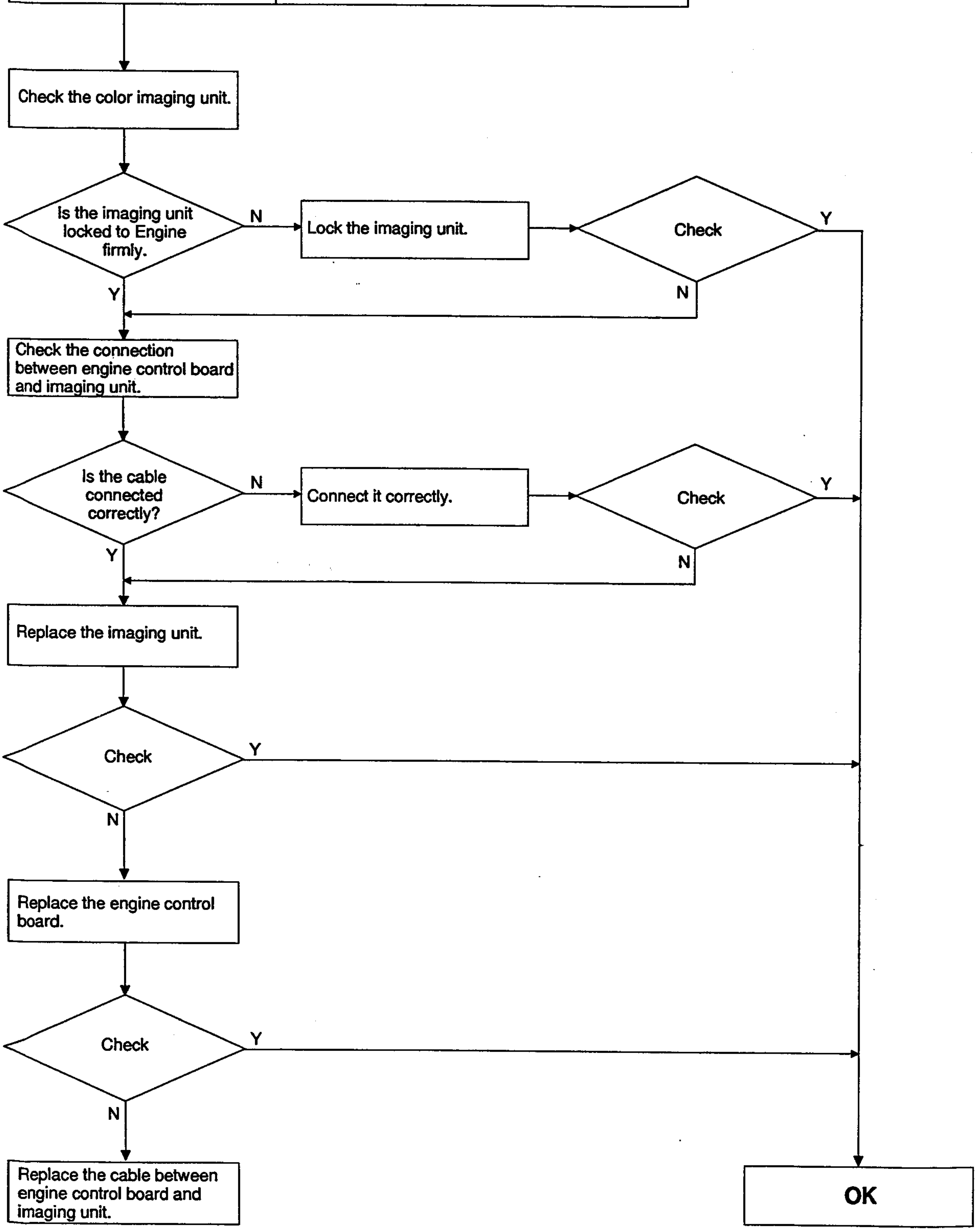
OPC home number and accumulator belt home number are not synchronous.


Check the imaging unit.
Is the imaging unit locked to Engine firmly.
N
Lock the imaging unit.
Check
Y
N
Y
Check the connection between engine control board and imaging unit.
Is the cable connected correctly?
N
Connect it correctly.
Check
Y
N
Y
Check the connection between engine control board and the accumulator belt home sensor board.
Is the cable connected correctly?
N
Connect it correctly.
Check
Y
N
Y
Check the accumulator belt home sensor board.
Is the sensor board gap clean?
N
Clean the gap.
Check
Y
N
Y
③
④


③
④
Replace the imaging unit.
Check
Y
N
Replace the engine control board.
Check
Y
N
·Replace the cable between engine control board and imaging unit.
·Replace the sensor board and cable.
OK

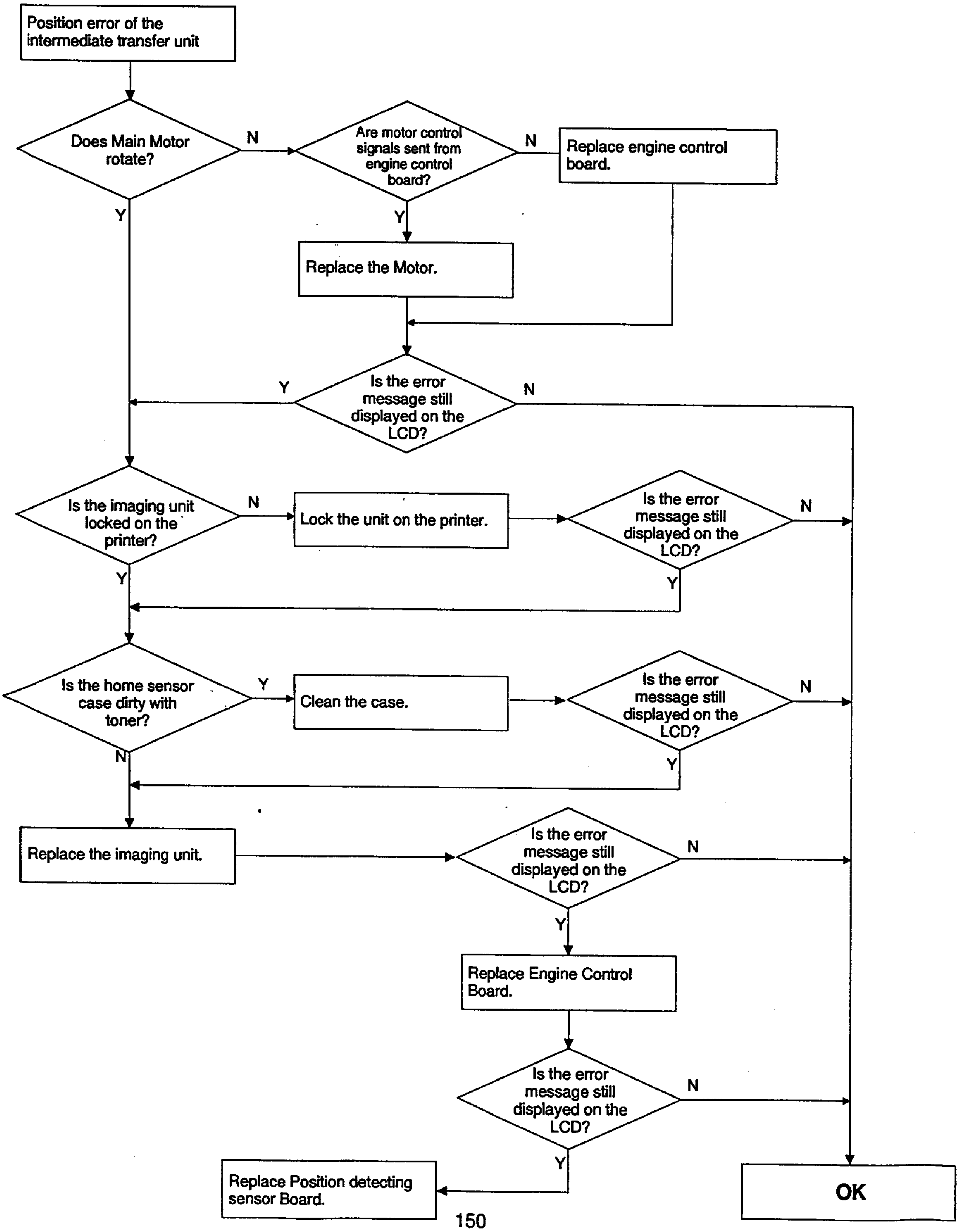
9.4.6 Printer Error 22

LCD Message	Possible Cause
Printer Error 22	OPC home is not detected within 4.5 sec during the main motor rotates.


Check the color imaging unit.
Is the imaging unit locked to Engine firmly.
N
Lock the imaging unit.
Check
Y
N
Y
Check the connection between engine control board and imaging unit.
Is the cable connected correctly?
N
Connect it correctly.
Check
Y
N
Y
Replace the imaging unit.
Check
Y
N
Replace the engine control board.
Check
Y
N
Replace the cable between engine control board and imaging unit.
OK

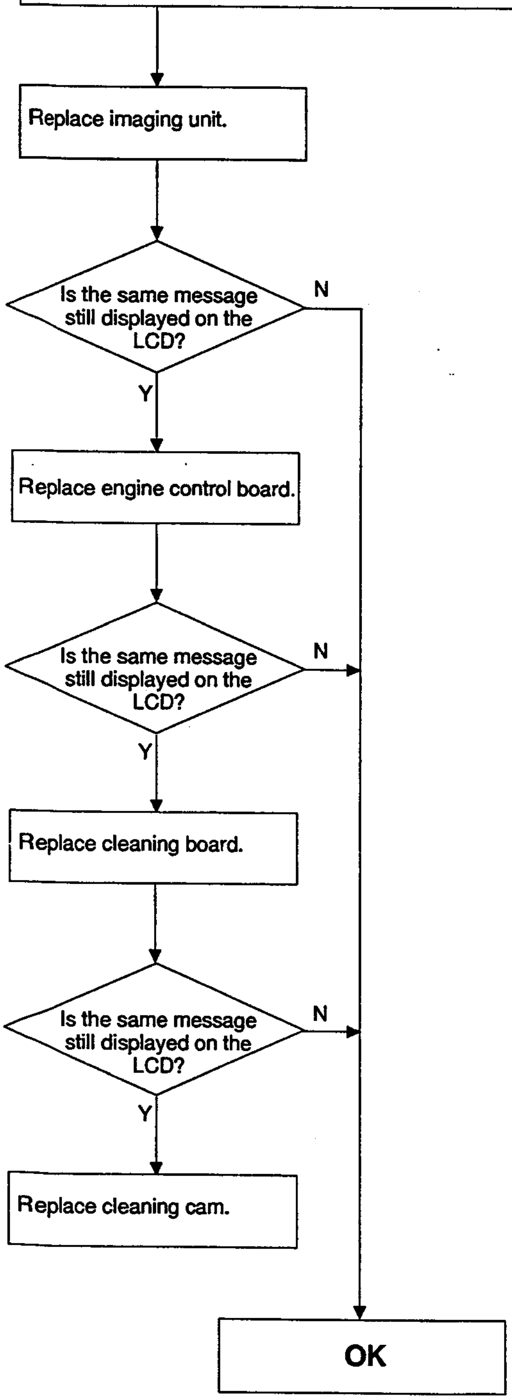
9.4.7 Printer Error 30

LCD Message	Possible Cause
Printer Error 30	Position error of the intermediate transfer unit


Position error of the intermediate transfer unit
Does Main Motor rotate?
N
Are motor control signals sent from engine control board?
N
Replace engine control board.
Y
Y
Replace the Motor.
Y
Is the error message still displayed on the LCD?
N
Is the imaging unit locked on the printer?
N
Lock the unit on the printer.
Is the error message still displayed on the LCD?
N
Y
Y
Is the home sensor case dirty with toner?
Y
Clean the case.
Is the error message still displayed on the LCD?
N
N
Y
Replace the imaging unit.
Is the error message still displayed on the LCD?
N
Y
Replace Engine Control Board.
Is the error message still displayed on the LCD?
N
Y
Replace Position detecting sensor Board.
OK

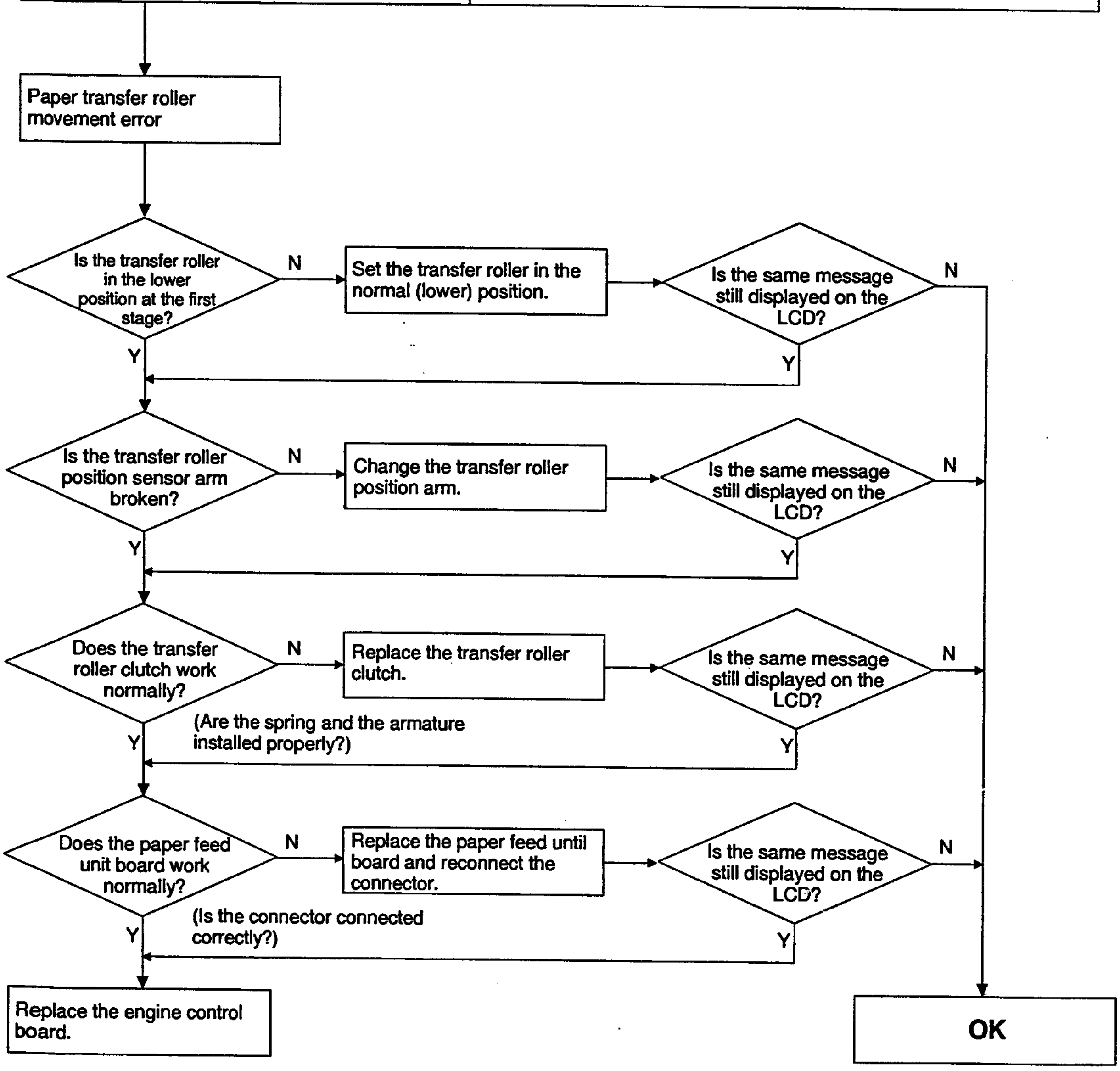
9.4.8 Printer Error 32

LCD Message	Possible Cause
Printer Error 32	Cleaning blade movement error


Replace imaging unit.
Is the same message still displayed on the LCD?
N
Y
Replace engine control board.
Is the same message still displayed on the LCD?
N
Y
Replace cleaning board.
Is the same message still displayed on the LCD?
N
Y
Replace cleaning cam.
OK

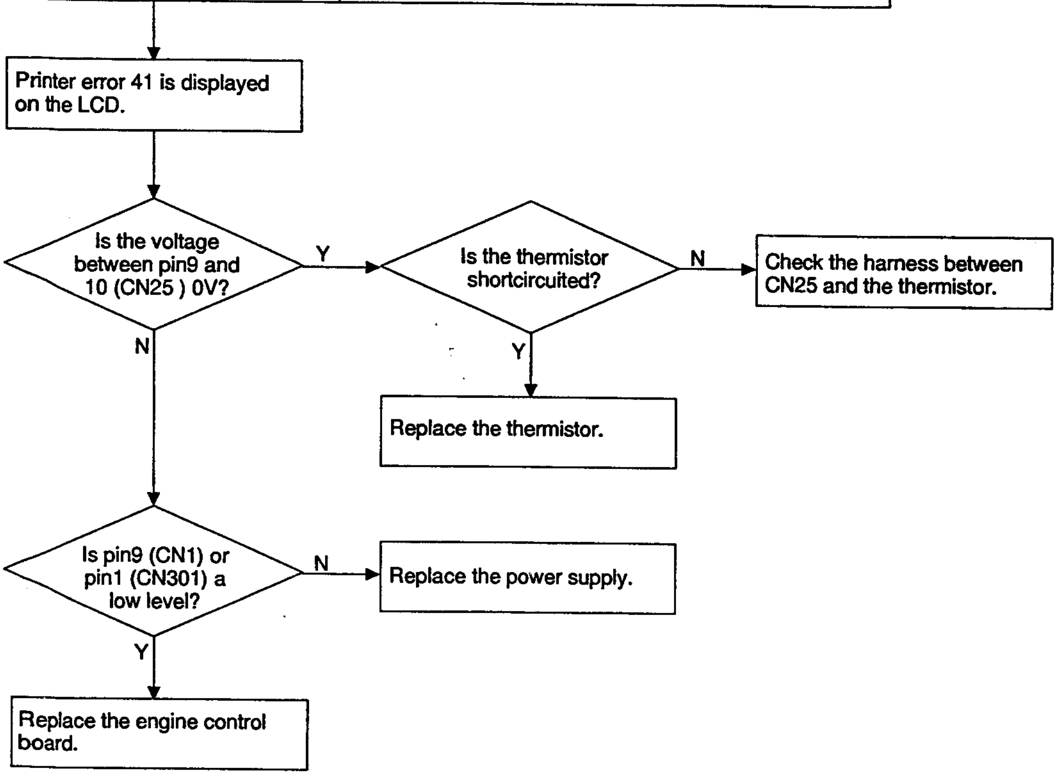
9.4.9 Printer Error 33

LCD Message	Possible Cause
Printer Error 33	Paper transfer roller movement error


Paper transfer roller movement error
Is the transfer roller in the lower position at the first stage?
N
Set the transfer roller in the normal (lower) position.
Is the same message still displayed on the LCD?
N
Y
Y
Is the transfer roller position sensor arm broken?
N
Change the transfer roller position arm.
Is the same message still displayed on the LCD?
N
Y
Y
Does the transfer roller clutch work normally?
N
Replace the transfer roller clutch.
Is the same message still displayed on the LCD?
N
(Are the spring and the armature installed properly?)
Y
Y
Does the paper feed unit board work normally?
N
Replace the paper feed until board and reconnect the connector.
Is the same message still displayed on the LCD?
N
(Is the connector connected correctly?)
Y
Y
Replace the engine control board.
OK

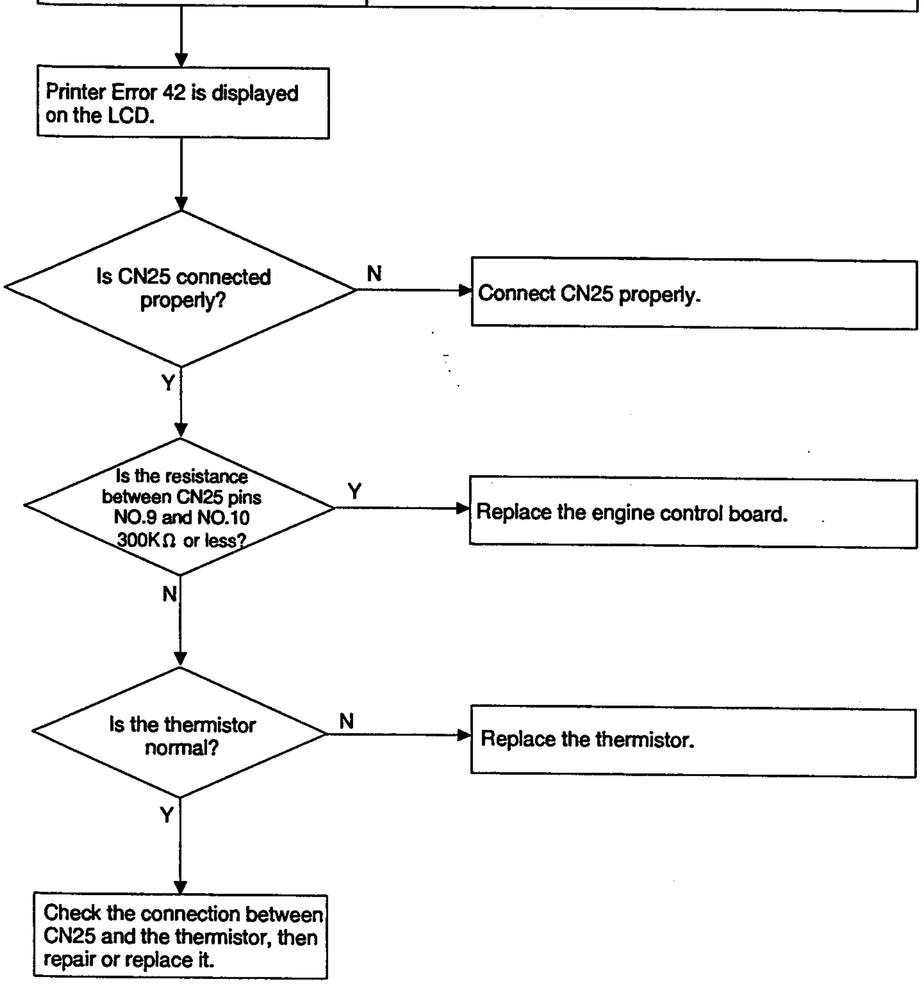
9.4.10 Printer Error 41

LCD Message	Possible Cause
Printer Error 41	Fuser temperature is over 210°C


Printer error 41 is displayed on the LCD.
Is the voltage between pin9 and 10 (CN25) 0V?
Y
N
Is the thermistor shortcircuited?
N
Y
Check the harness between CN25 and the thermistor.
Replace the thermistor.
Is pin9 (CN1) or pin1 (CN301) a low level?
N
Y
Replace the power supply.
Replace the engine control board.

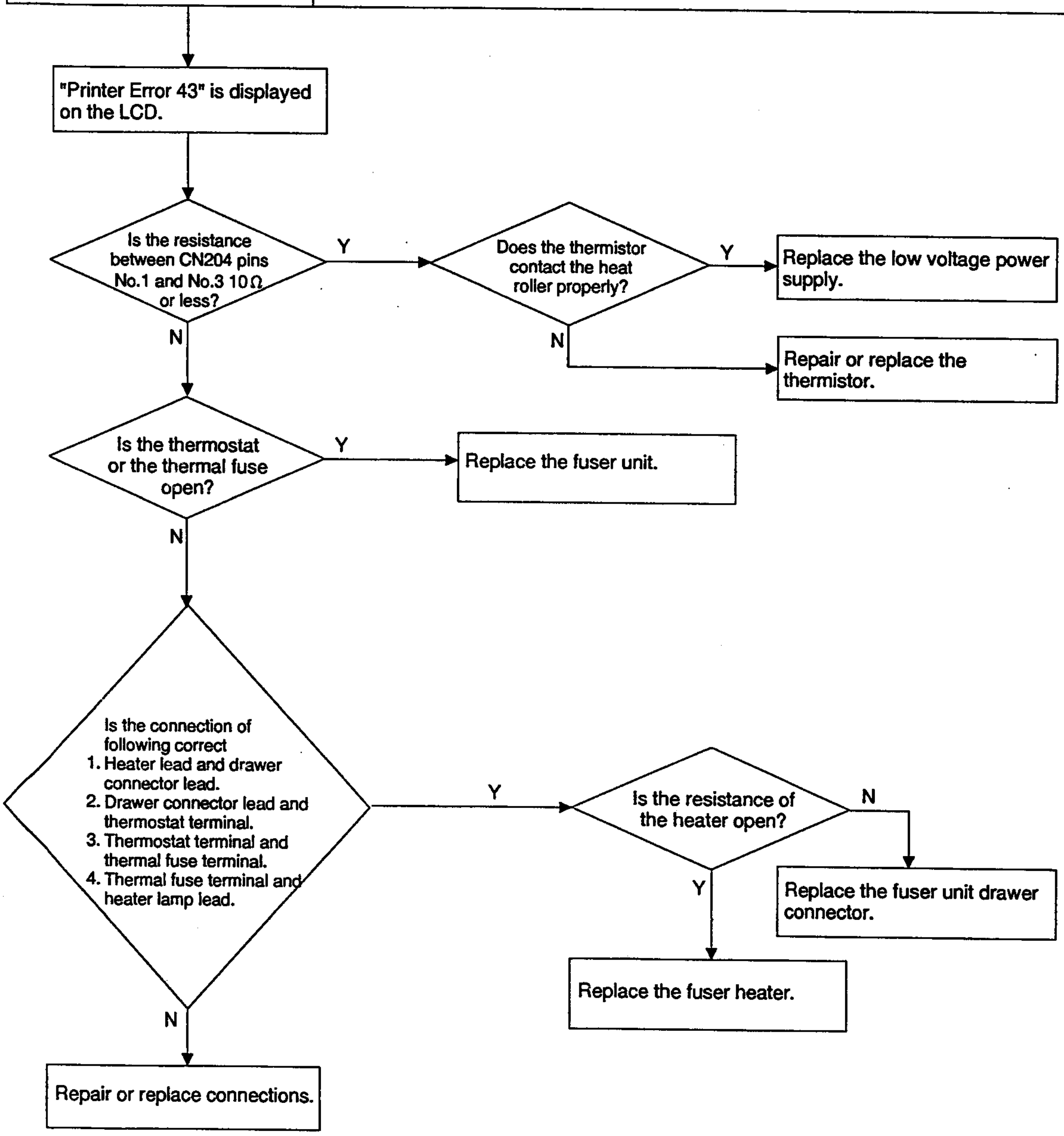
9.4.11 Printer Error 42

LCD Message	Possible Cause
Printer Error 42	Fuser thermistor is disconnected.


Printer Error 42 is displayed on the LCD.
Is CN25 connected properly?
N
Connect CN25 properly.
Y
Is the resistance between CN25 pins NO.9 and NO.10 300KΩ or less?
Y
Replace the engine control board.
N
Is the thermistor normal?
N
Replace the thermistor.
Y
Check the connection between CN25 and the thermistor, then repair or replace it.

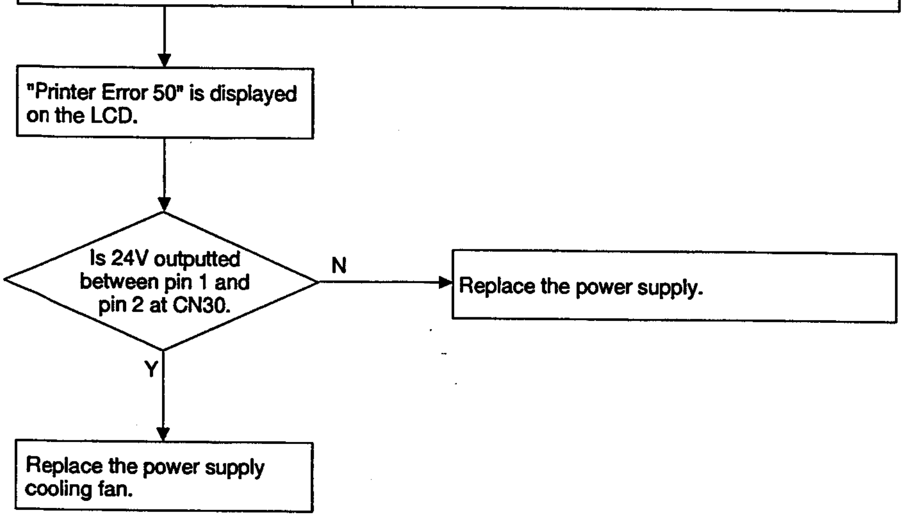
9.4.12 Printer Error 43

LCD Message	Possible Cause
Printer Error 43	Fuser temperature does not reach 100°C within 200sec,160°C within 500sec during warming up, or it is less than 120°C during standby, and it does not return set temperature within 100 sec after the low temperature error occurred during printing.


"Printer Error 43" is displayed on the LCD.
Is the resistance between CN204 pins No.1 and No.3 10Ω or less?
Y
N
Does the thermistor contact the heat roller properly?
Y
N
Replace the low voltage power supply.
Repair or replace the thermistor.
Is the thermostat or the thermal fuse open?
Y
N
Replace the fuser unit.
Is the connection of following correct
1. Heater lead and drawer connector lead.
2. Drawer connector lead and thermostat terminal.
3. Thermostat terminal and thermal fuse terminal.
4. Thermal fuse terminal and heater lamp lead.
Y
N
Is the resistance of the heater open?
N
Y
Replace the fuser unit drawer connector.
Replace the fuser heater.
Repair or replace connections.

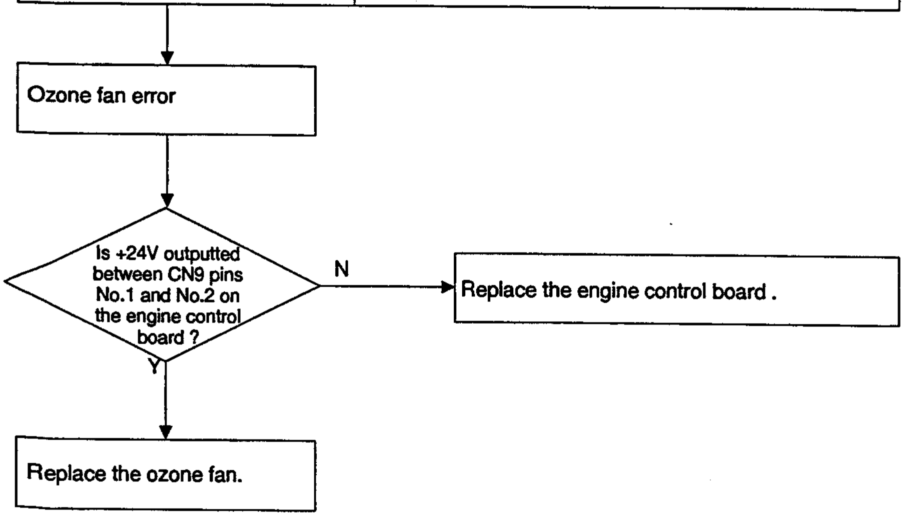
9.4.13 Printer Error 50

LCD Message	Possible Cause
Printer Error 50	Power supply fan is not rotating at normal speed.


"Printer Error 50" is displayed on the LCD.
Is 24V outputted between pin 1 and pin 2 at CN30.
N
Replace the power supply.
Y
Replace the power supply cooling fan.

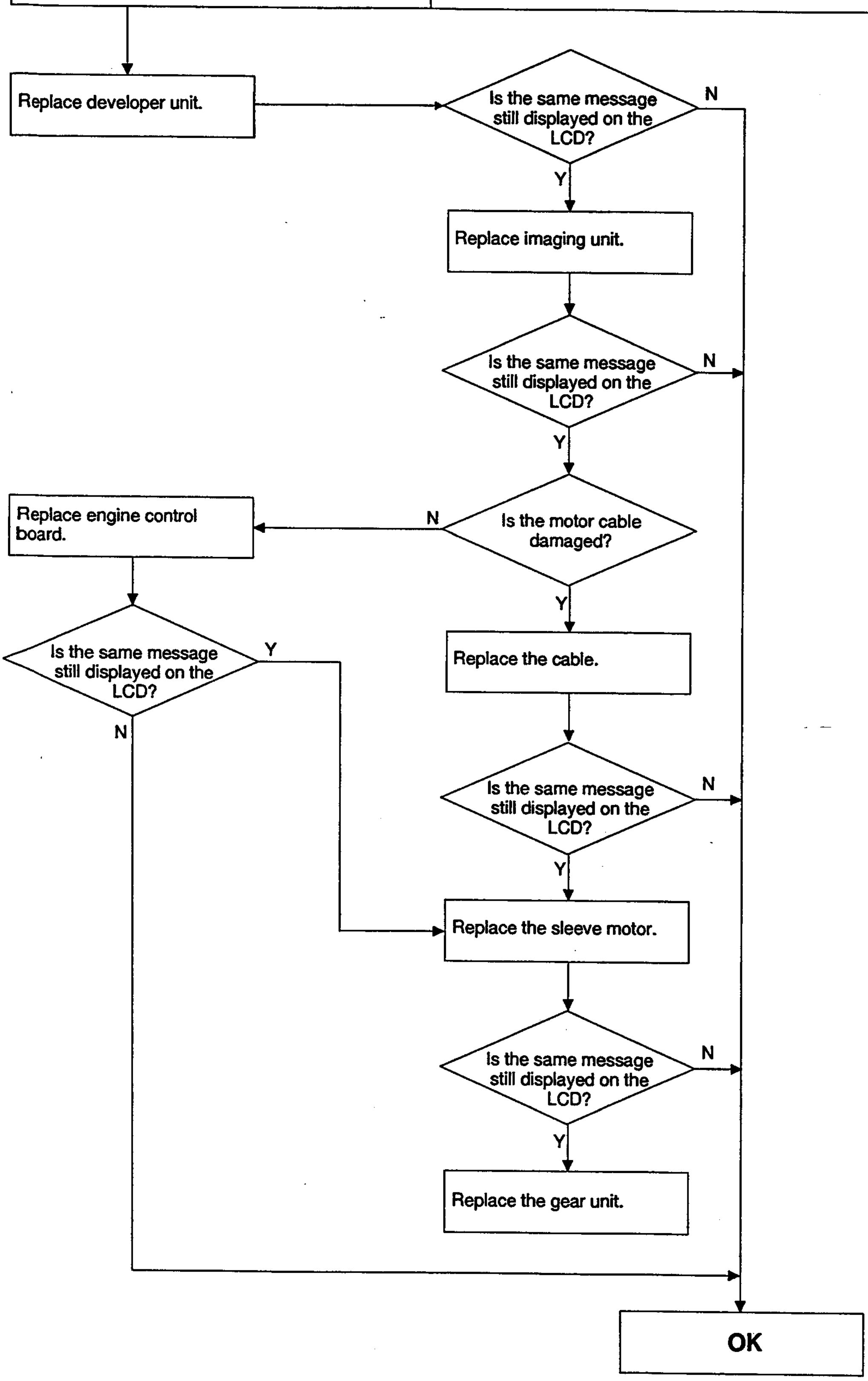
9.4.14 Printer Error 51

LCD Message	Possible Cause
Printer Error 51	Ozone fan is not rotating at normal speed.


Ozone fan error
Is +24V outputted between CN9 pins No.1 and No.2 on the engine control board ?
N
Replace the engine control board .
Y
Replace the ozone fan.

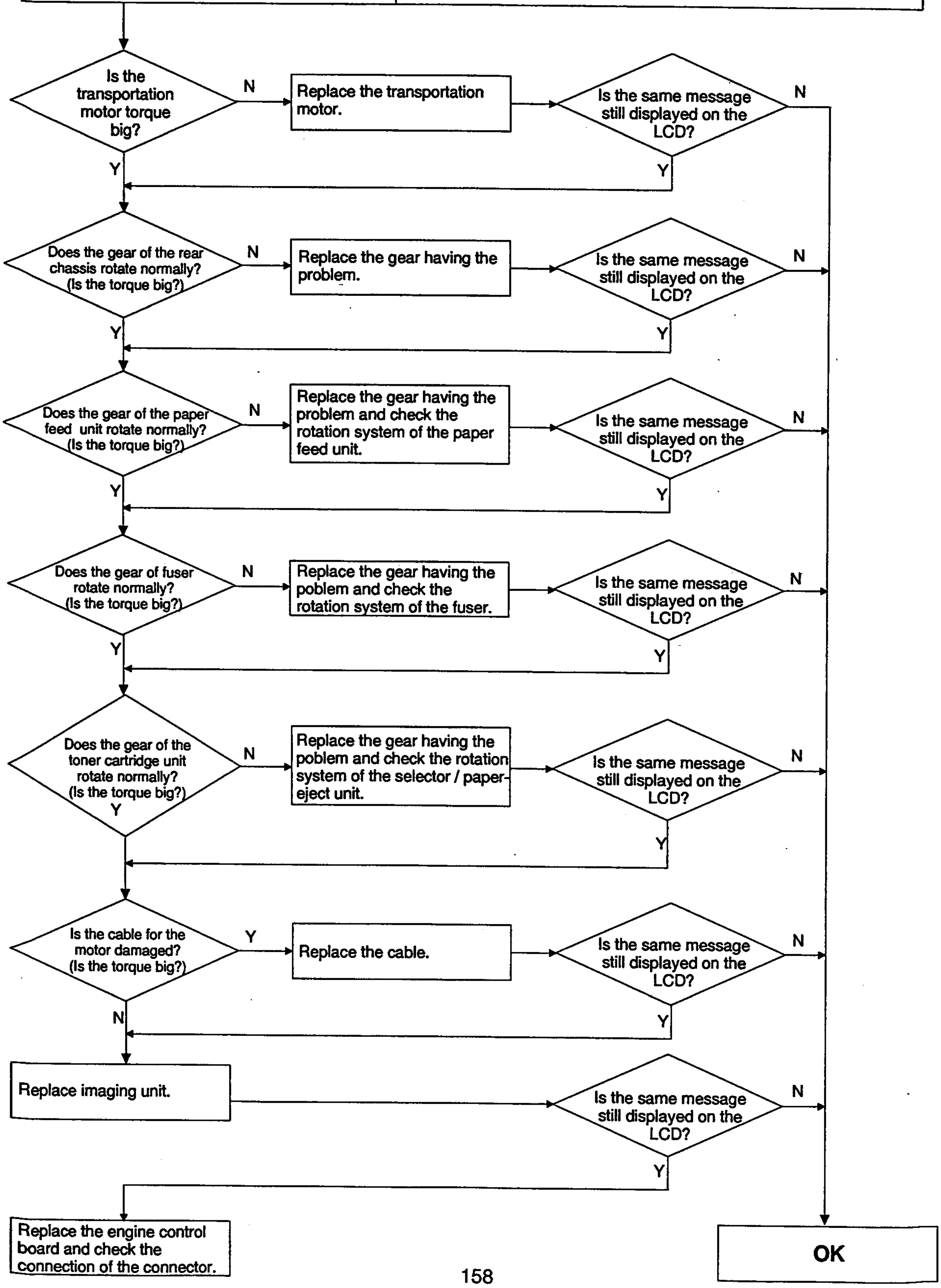
9.4.15 Printer Error 61

LCD Message	Possible Cause
Printer Error 61	Sleeve motor unlocked


Replace developer unit.
Is the same message still displayed on the LCD?
N
Y
Replace imaging unit.
Is the same message still displayed on the LCD?
N
Y
Is the motor cable damaged?
N
Y
Replace engine control board.
Is the same message still displayed on the LCD?
Y
N
Replace the cable.
Is the same message still displayed on the LCD?
N
Y
Replace the sleeve motor.
Is the same message still displayed on the LCD?
N
Y
Replace the gear unit.
OK

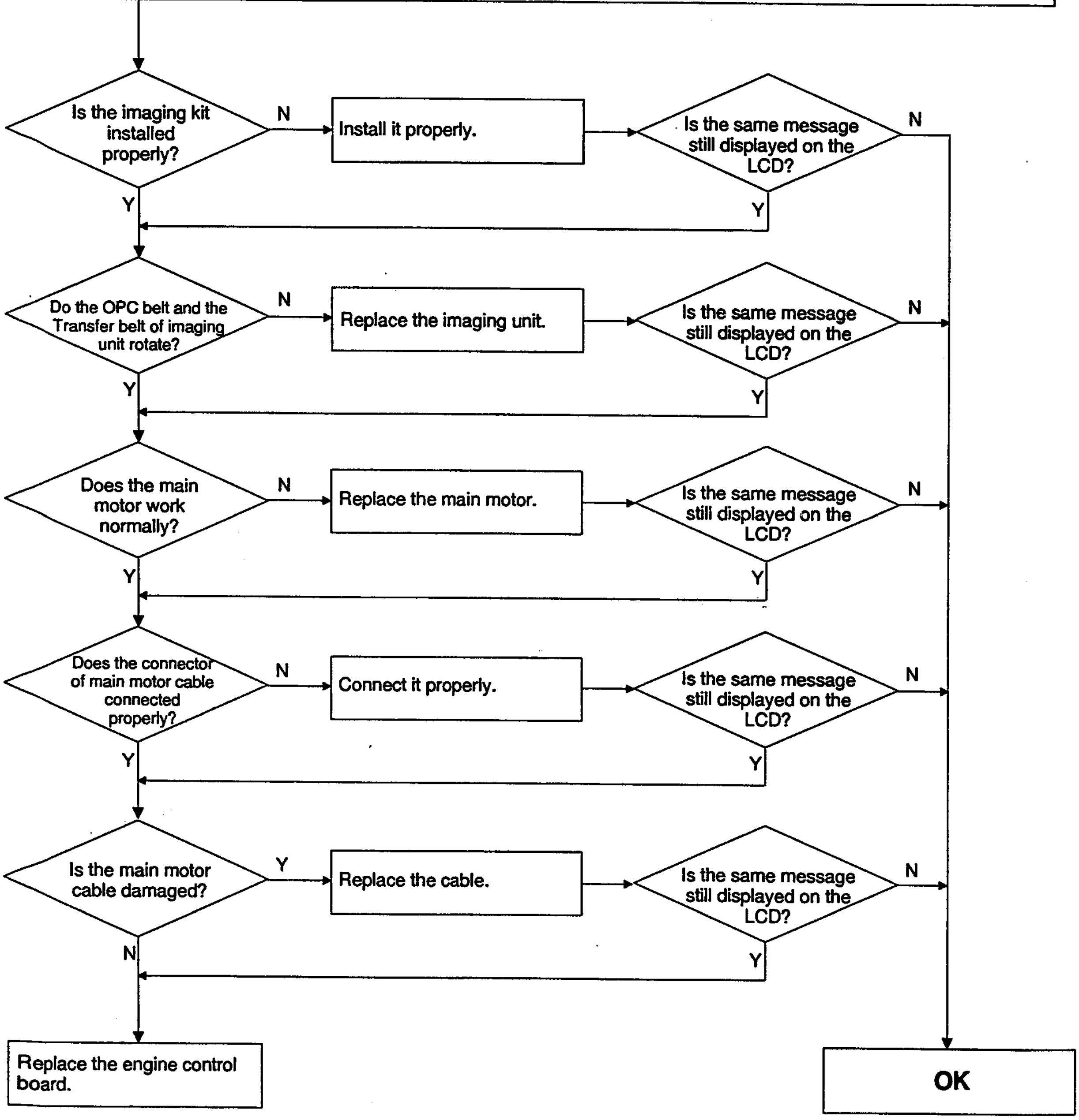
9.4.16 Printer Error 62

LCD Message	Possible Cause
Printer Error 62	Paper feed motor unlocked


Is the transportation motor torque big?
N
Replace the transportation motor.
Is the same message still displayed on the LCD?
N
Y
Y
Does the gear of the rear chassis rotate normally? (Is the torque big?)
N
Replace the gear having the problem.
Is the same message still displayed on the LCD?
N
Y
Y
Does the gear of the paper feed unit rotate normally? (Is the torque big?)
N
Replace the gear having the problem and check the rotation system of the paper feed unit.
Is the same message still displayed on the LCD?
N
Y
Y
Does the gear of fuser rotate normally? (Is the torque big?)
N
Replace the gear having the poblem and check the rotation system of the fuser.
Is the same message still displayed on the LCD?
N
Y
Y
Does the gear of the toner cartridge unit rotate normally? (Is the torque big?)
Y
N
Replace the gear having the poblem and check the rotation system of the selector / paper-eject unit.
Is the same message still displayed on the LCD?
N
Y
Is the cable for the motor damaged? (Is the torque big?)
Y
Replace the cable.
Is the same message still displayed on the LCD?
N
Y
N
Replace imaging unit.
Is the same message still displayed on the LCD?
N
Y
Replace the engine control board and check the connection of the connector.
OK

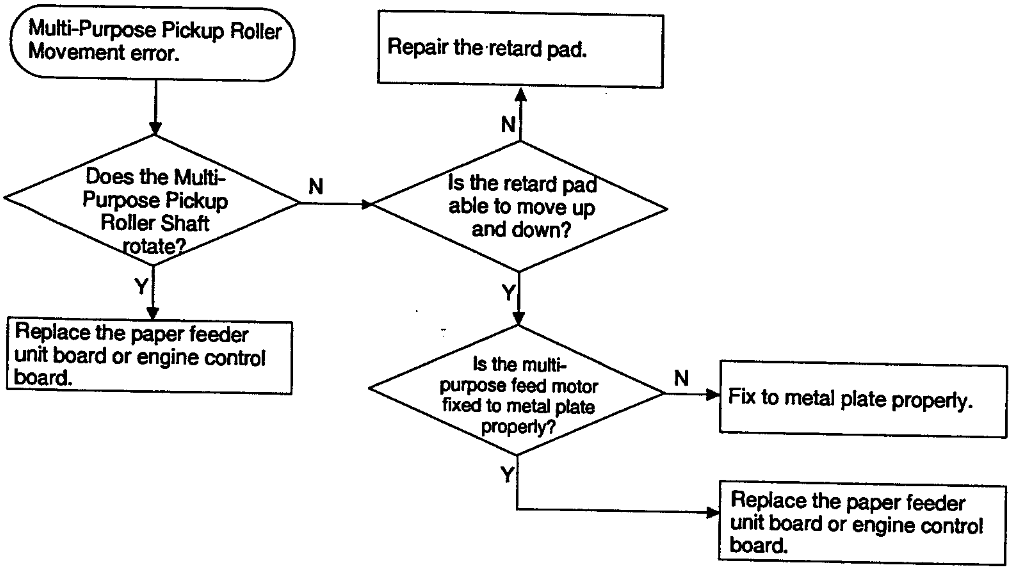
9.4.17 Printer Error 63

LCD Message	Possible Cause
Printer Error 63	Main motor unlocked


Is the imaging kit installed properly?
N
Install it properly.
Is the same message still displayed on the LCD?
N
Y
Y
Do the OPC belt and the Transfer belt of imaging unit rotate?
N
Replace the imaging unit.
Is the same message still displayed on the LCD?
N
Y
Y
Does the main motor work normally?
N
Replace the main motor.
Is the same message still displayed on the LCD?
N
Y
Y
Does the connector of main motor cable connected properly?
N
Connect it properly.
Is the same message still displayed on the LCD?
N
Y
Y
Is the main motor cable damaged?
Y
Replace the cable.
Is the same message still displayed on the LCD?
N
N
Y
Replace the engine control board.
OK

9.4.18 Printer Error 64

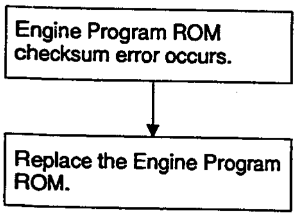
LCD Message	Possible Cause
Printer Error 64	Multi-purpose pickup roller movement error



Multi-Purpose Pickup Roller Movement error.
Does the Multi-Purpose Pickup Roller Shaft rotate?
N
Y
Replace the paper feeder unit board or engine control board.
Is the retard pad able to move up and down?
N
Repair the retard pad.
Y
Is the multi-purpose feed motor fixed to metal plate properly?
N
Fix to metal plate properly.
Y
Replace the paper feeder unit board or engine control board.

9.4.19 Printer Error 70

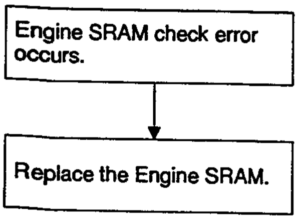
LCD Message	Possible Cause
Printer Error 70	Engine Program ROM checksum error



Engine Program ROM checksum error occurs.
Replace the Engine Program ROM.

9.4.20 Printer Error 71

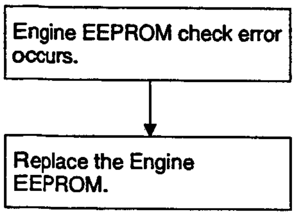
LCD Message	Possible Cause
Printer Error 71	Engine SRAM check error



Engine SRAM check error occurs.
Replace the Engine SRAM.

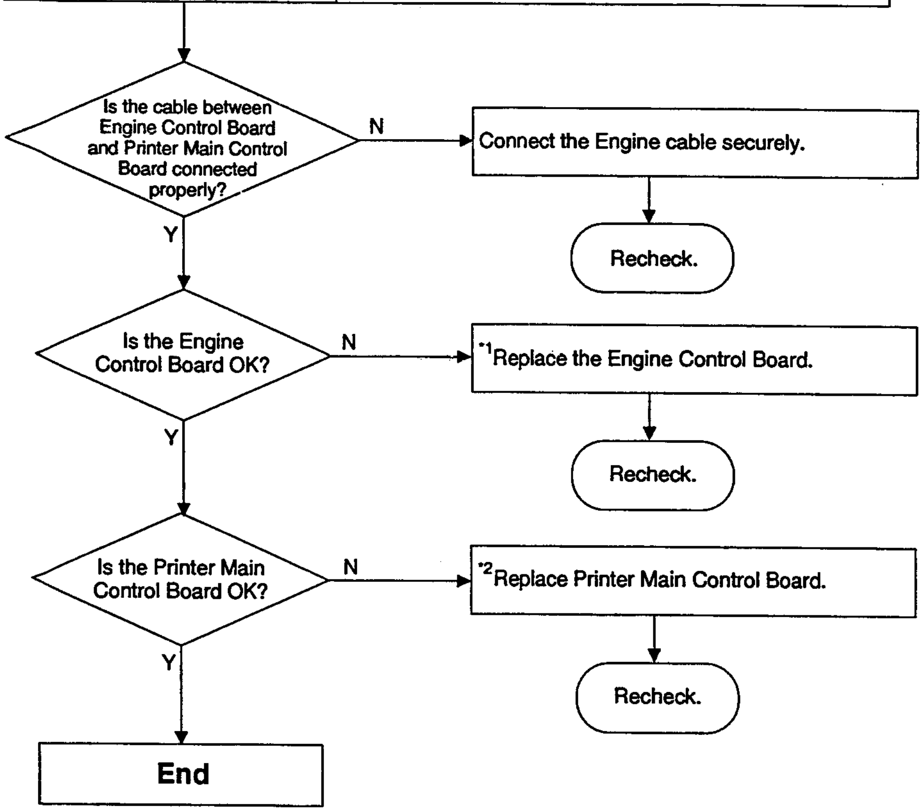
9.4.21 Printer Error 72

LCD Message	Possible Cause
Printer Error 72	Engine EEPROM check error


Engine EEPROM check error occurs.
Replace the Engine EEPROM.

9.4.22 Printer Error 73

LCD Message	Possible Cause
Printer Error 73	Communication Error of Printer Main Control Board and Engine Control Board.

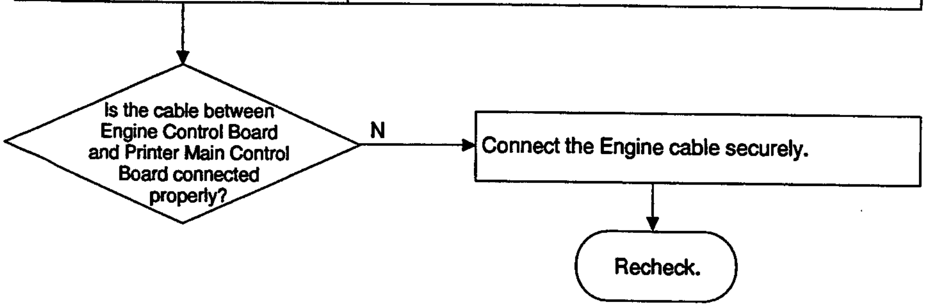

Is the cable between Engine Control Board and Printer Main Control Board connected properly?
N
Connect the Engine cable securely.
Recheck.
Y
Is the Engine Control Board OK?
N
*1Replace the Engine Control Board.
Recheck.
Y
Is the Printer Main Control Board OK?
N
*2Replace Printer Main Control Board.
Recheck.
Y
End

[*1] When replacing the Engine Control Board, remove EEPROM (IC6) from the original Engine Control Board and install it on the new Engine Control Board.

[*2] When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

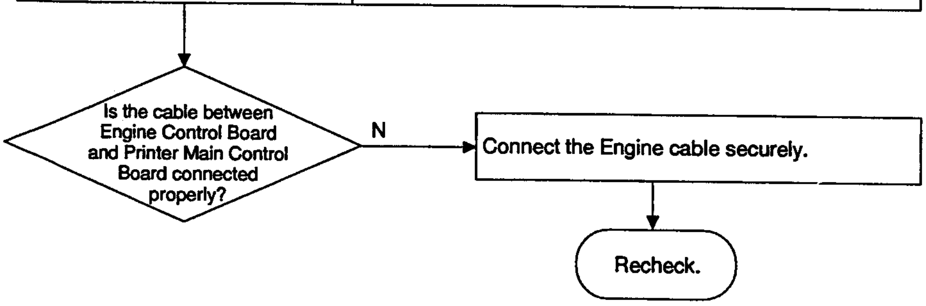
9.4.23 Printer Error 74

LCD Message	Possible Cause
Printer Error 74	Printer Main Control Board cannot detect the VSYNC signal from the engine.


Is the cable between Engine Control Board and Printer Main Control Board connected properly?
N
Connect the Engine cable securely.
Recheck.

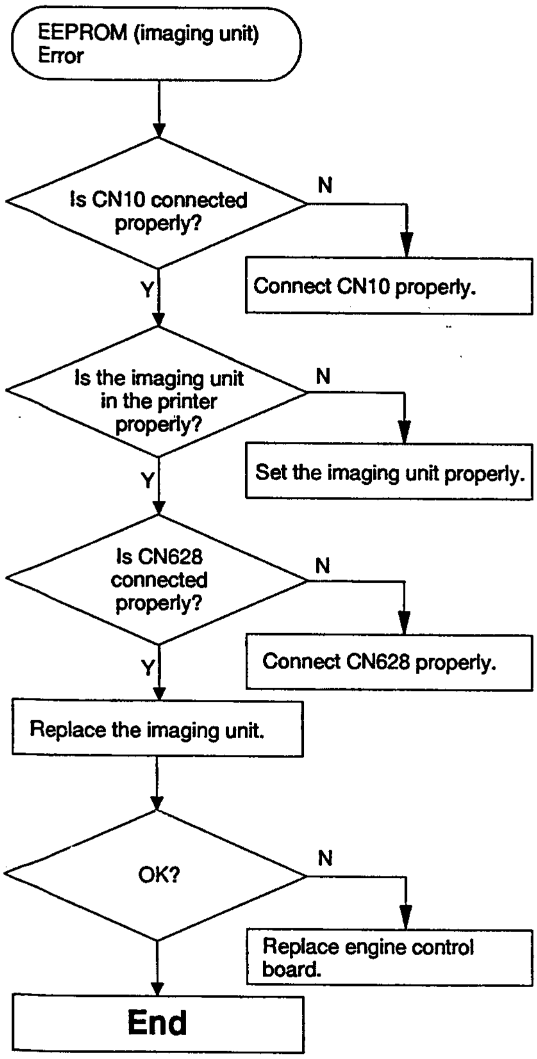
9.4.24 Printer Error 75

LCD Message	Possible Cause
Printer Error 75	Printer Main Control Board cannot detect the PPRDY signal within 800ms from the engine when the ESM signal is turned on.


Is the cable between Engine Control Board and Printer Main Control Board connected properly?
N
Connect the Engine cable securely.
Recheck.

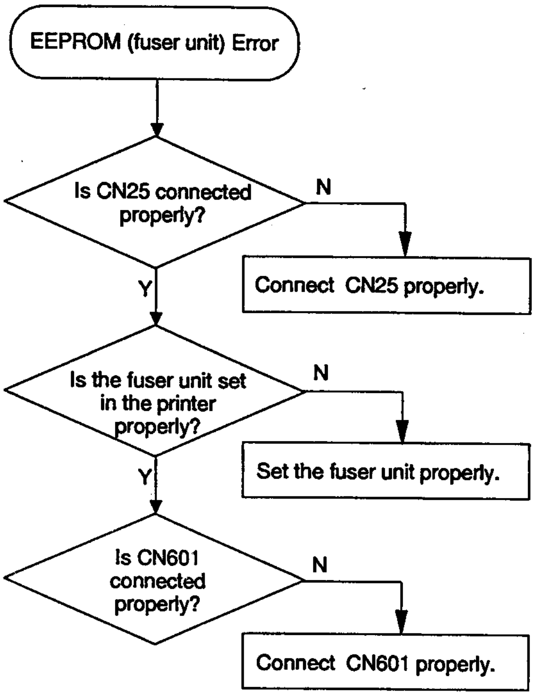
9.4.25 Printer Error 76

LCD Message	Possible Cause
Printer Error 76	EEPROM (imaging unit) Error


EEPROM (imaging unit) Error
Is CN10 connected properly?
N
Connect CN10 properly.
Y
Is the imaging unit in the printer properly?
N
Set the imaging unit properly.
Y
Is CN628 connected properly?
N
Connect CN628 properly.
Y
Replace the imaging unit.
OK?
N
Replace engine control board.
End

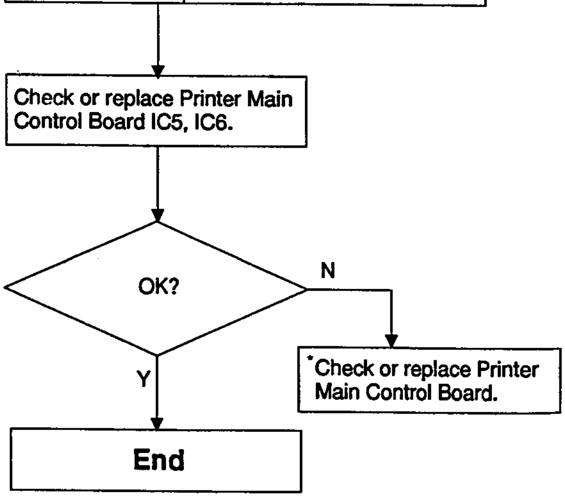
9.4.26 Printer Error 77

LCD Message	Possible Cause
Printer Error 77	EEPROM (fuser unit) Error


EEPROM (fuser unit) Error
Is CN25 connected properly?
N
Connect CN25 properly.
Y
Is the fuser unit set in the printer properly?
N
Set the fuser unit properly.
Y
Is CN601 connected properly?
N
Connect CN601 properly.

9.4.27 Printer Error 80

LCD Message	Possible Cause
Printer Error 80	Printer Main Control Board Program ROM checksum error.


Check or replace Printer Main Control Board IC5, IC6.
OK?
N
*Check or replace Printer Main Control Board.
Y
End

* When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.28 Printer Error 81

LCD Message	Possible Cause
Printer Error 81	Printer Main Control Board Work RAM (IC10) check Error

*Check or replace Printer Main Control Board.

*When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.29 Printer Error 87

LCD Message	Possible Cause
Printer Error 87	Printer Main Control Board ASIC#2 (IC3) Internal memory or SRAM (IC11-IC14) check Error

* Check or replace Printer Main Control Board.

*When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.30 Printer Error 88

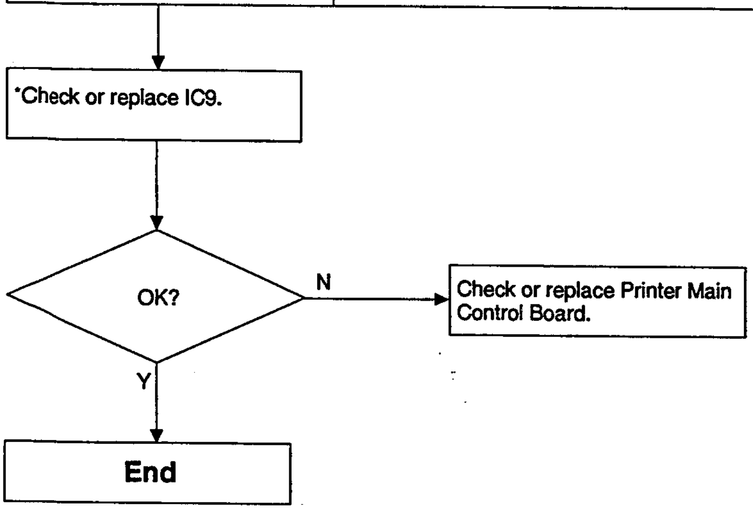
LCD Message	Possible Cause
Printer Error 88	Printer Main Control Board ASIC#3 (IC4) Internal memory or SRAM (IC25-IC29) check Error

*Check or replace Printer Main Control Board.

*When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.31 Printer Error 90

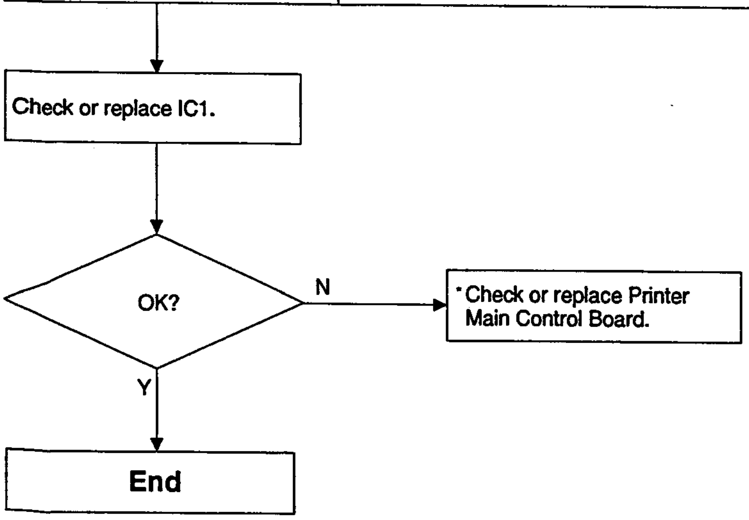
LCD Message	Possible Cause
Printer Error 90	Printer Main Control Board EEPROM (IC9) Access Error


*Check or replace IC9.
OK?
N
Check or replace Printer Main Control Board.
Y
End

* When IC9 is replaced, the selectable settings through the printer's panel are reset and the life counter values are disappeared. Therefore, the printer must set up the settings again (see section 3.1). The life counter value can not revert. The life counter value indicated in the LCD is different from the actual. However, the printer functions normally.
"Printer Error 90" is displayed on the LCD, when power on after replacing IC9. Turn the power off, then on to clear the error message.

9.4.32 Printer Error 91

LCD Message	Possible Cause
Printer Error 91	Printer Main Control Board CPU (IC1) Error


Check or replace IC1.
OK?
N
*Check or replace Printer Main Control Board.
Y
End

*When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.33 Printer Error 92

LCD Message	Possible Cause
Printer Error 92	Printer Main Control Board SCSI controller (IC30) Error

*Check or replace Printer Main Control Board.

*When replacing the Printer Main Control Board, remove IC9 from original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.34 Printer Error 94

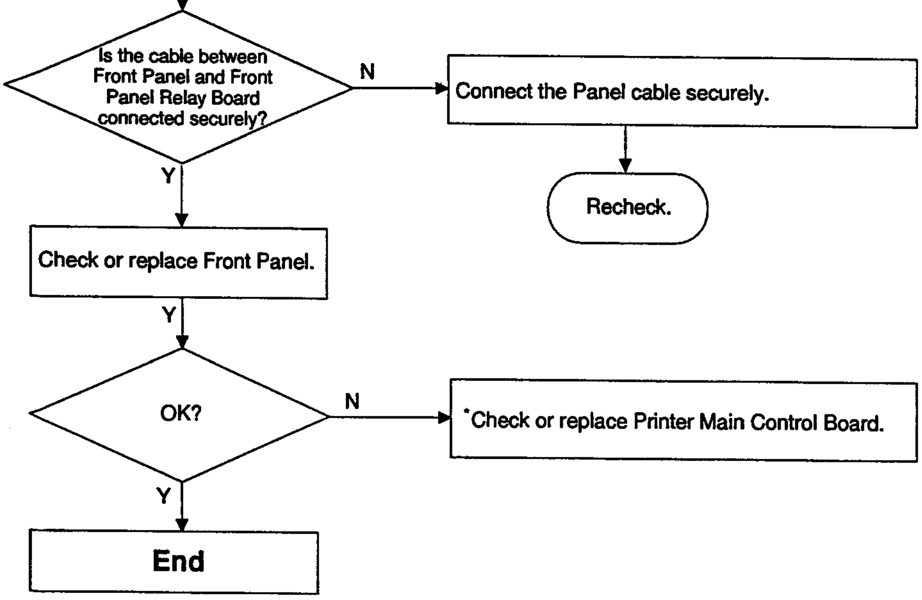
LCD Message	Possible Cause
Printer Error 94	Printer Main Control Board Parallel I/F controller (IC32) Error

*Check or replace Printer Main Control Board.

*When replacing the Printer Main Control Board, remove IC9 from original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.35 Printer Error 95

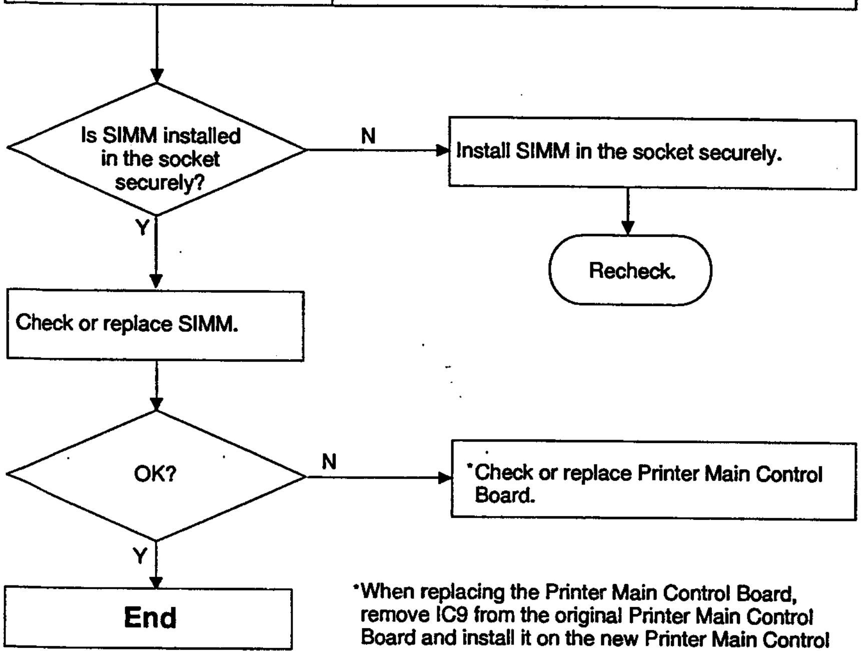
LCD Message	Possible Cause
Printer Error 95	Printer Panel Error


Is the cable between Front Panel and Front Panel Relay Board connected securely?
N
Connect the Panel cable securely.
Recheck.
Y
Check or replace Front Panel.
Y
OK?
N
*Check or replace Printer Main Control Board.
Y
End

*When replacing the Printer Main Control Board, remove IC9 from original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.36 SIMM Check Error

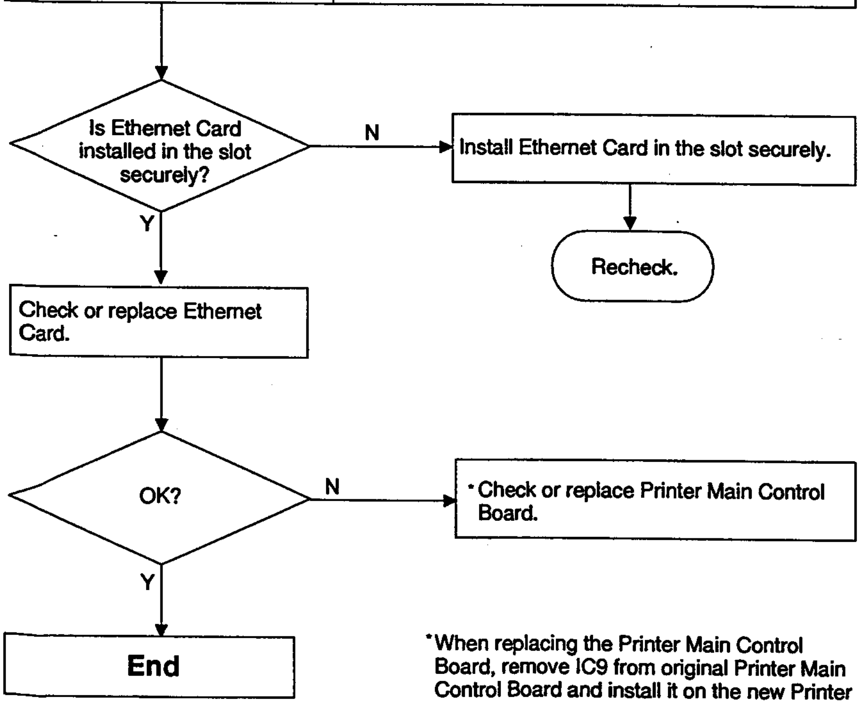
LCD Message	Possible Cause
Standard SIMM Check Error	Printer Main Control Board Optional SIMM check error has occurred at power on


Is SIMM installed in the socket securely?
N
Install SIMM in the socket securely.
Recheck.
Y
Check or replace SIMM.
OK?
N
*Check or replace Printer Main Control Board.
Y
End

*When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.37 Ethernet Card Check Error

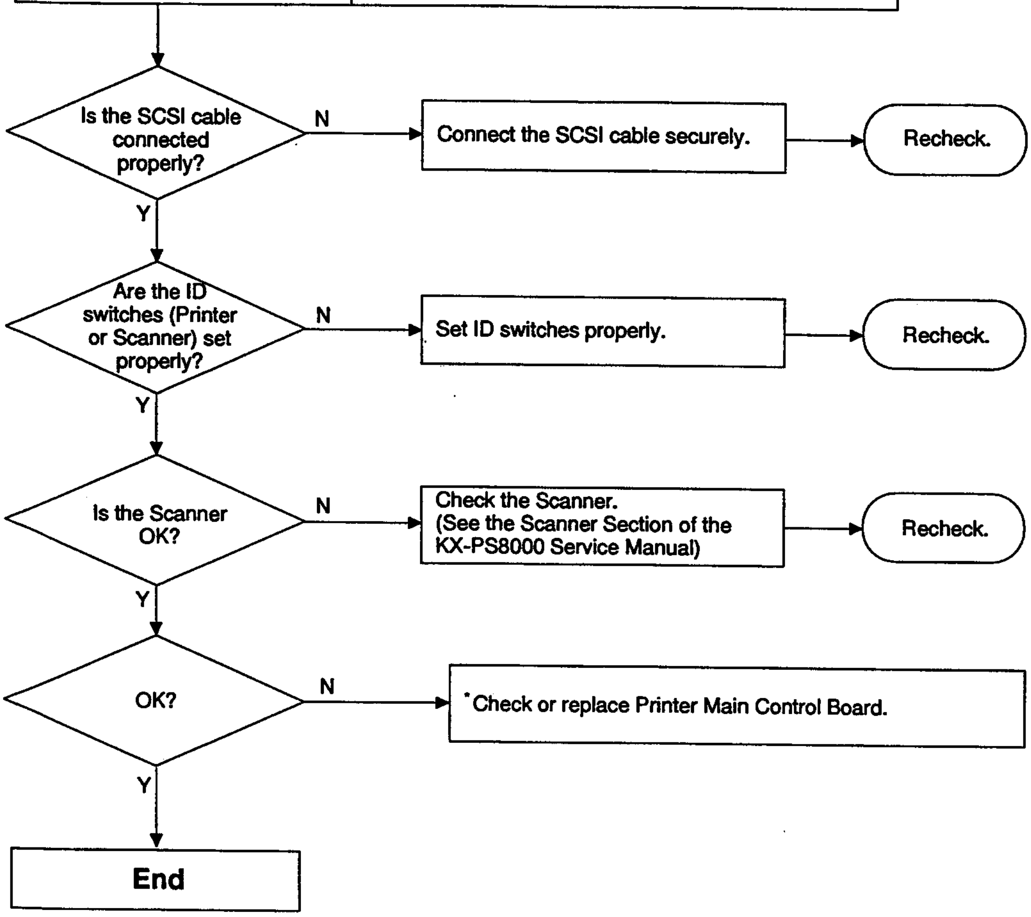
LCD Message	Possible Cause
Ethernet Card Check Error	Ethernet Card I/F Error


Is Ethernet Card installed in the slot securely?
N
Install Ethernet Card in the slot securely.
Recheck.
Y
Check or replace Ethernet Card.
OK?
N
*Check or replace Printer Main Control Board.
Y
End

*When replacing the Printer Main Control Board, remove IC9 from original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.38 SCSI Error

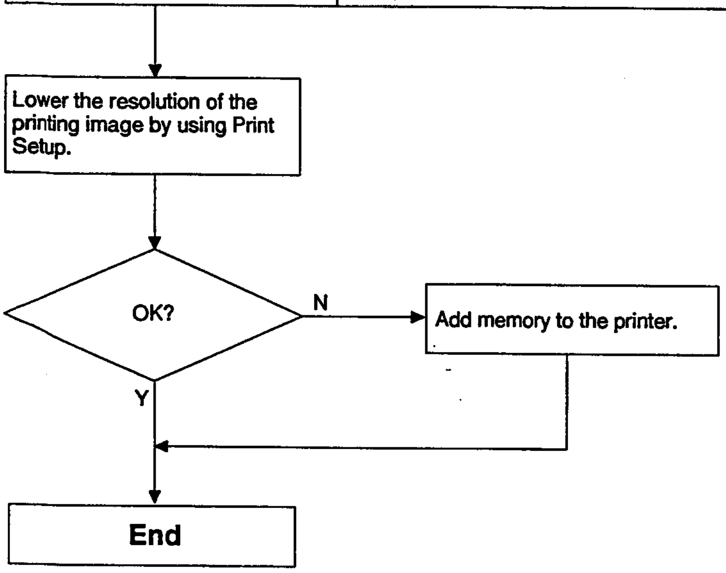
LCD Message	Possible Cause
SCSI Error	Cannot established the connection to the Scanner in SCSI


Is the SCSI cable connected properly?
N
Connect the SCSI cable securely.
Recheck.
Y
Are the ID switches (Printer or Scanner) set properly?
N
Set ID switches properly.
Recheck.
Y
Is the Scanner OK?
N
Check the Scanner.
(See the Scanner Section of the KX-PS8000 Service Manual)
Recheck.
Y
OK?
N
*Check or replace Printer Main Control Board.
Y
End

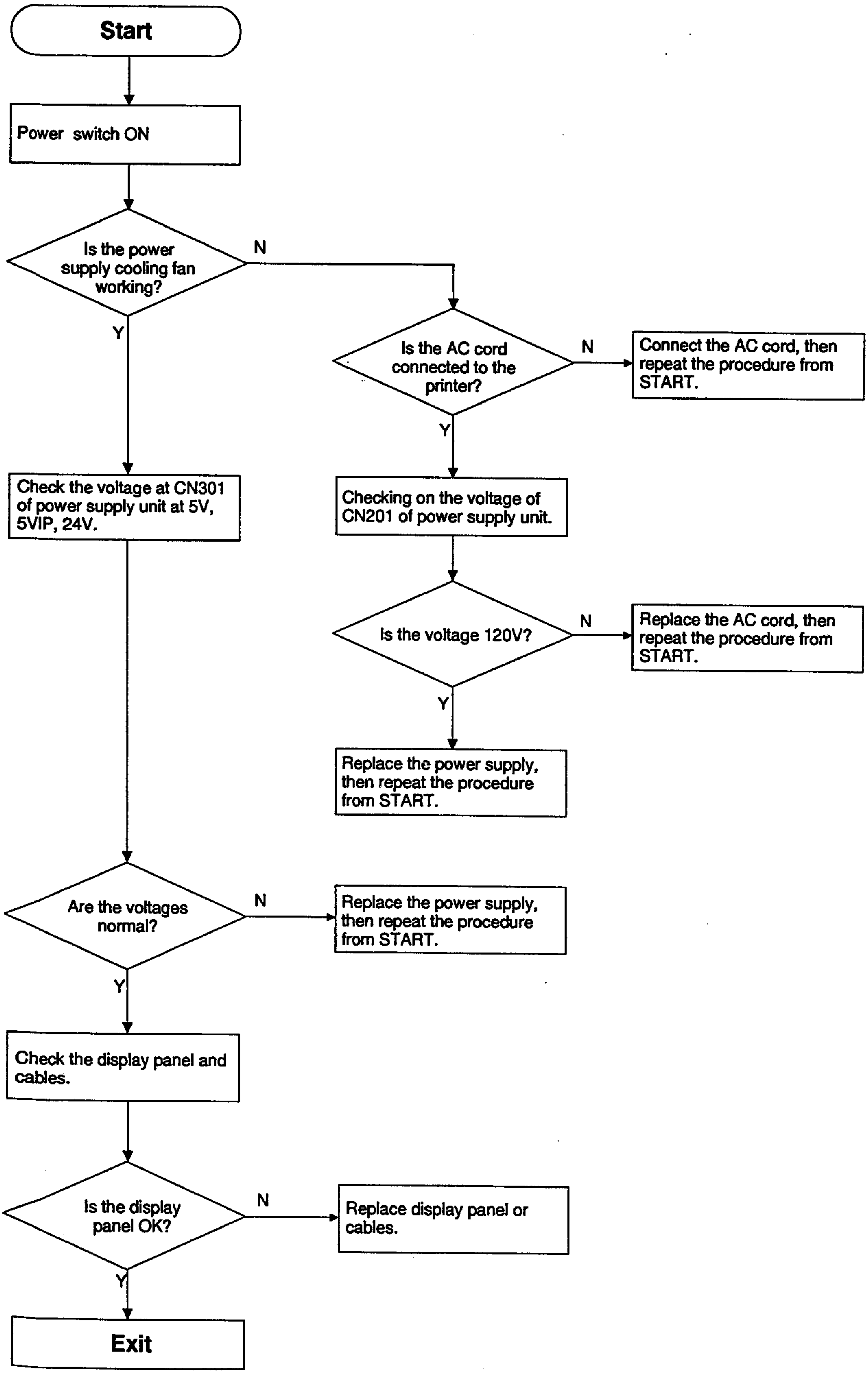
*When replacing the Printer Main Control Board, remove IC9 from the original Printer Main Control Board and install it on the new Printer Main Control Board.

9.4.39 Memory Overflow

LCD Message	Possible Cause
Memory Overflow	Print data is larger than the capacity of the memory being installed


Lower the resolution of the printing image by using Print Setup.
OK?
N
Add memory to the printer.
Y
End

9.5 No Message Section


Start
Power switch ON
Is the power supply cooling fan working?
N
Y
Is the AC cord connected to the printer?
N
Connect the AC cord, then repeat the procedure from START.
Y
Check the voltage at CN301 of power supply unit at 5V, 5VIP, 24V.
Checking on the voltage of CN201 of power supply unit.
Is the voltage 120V?
N
Replace the AC cord, then repeat the procedure from START.
Y
Replace the power supply, then repeat the procedure from START.
Are the voltages normal?
N
Replace the power supply, then repeat the procedure from START.
Y
Check the display panel and cables.
Is the display panel OK?
N
Replace display panel or cables.
Y
Exit

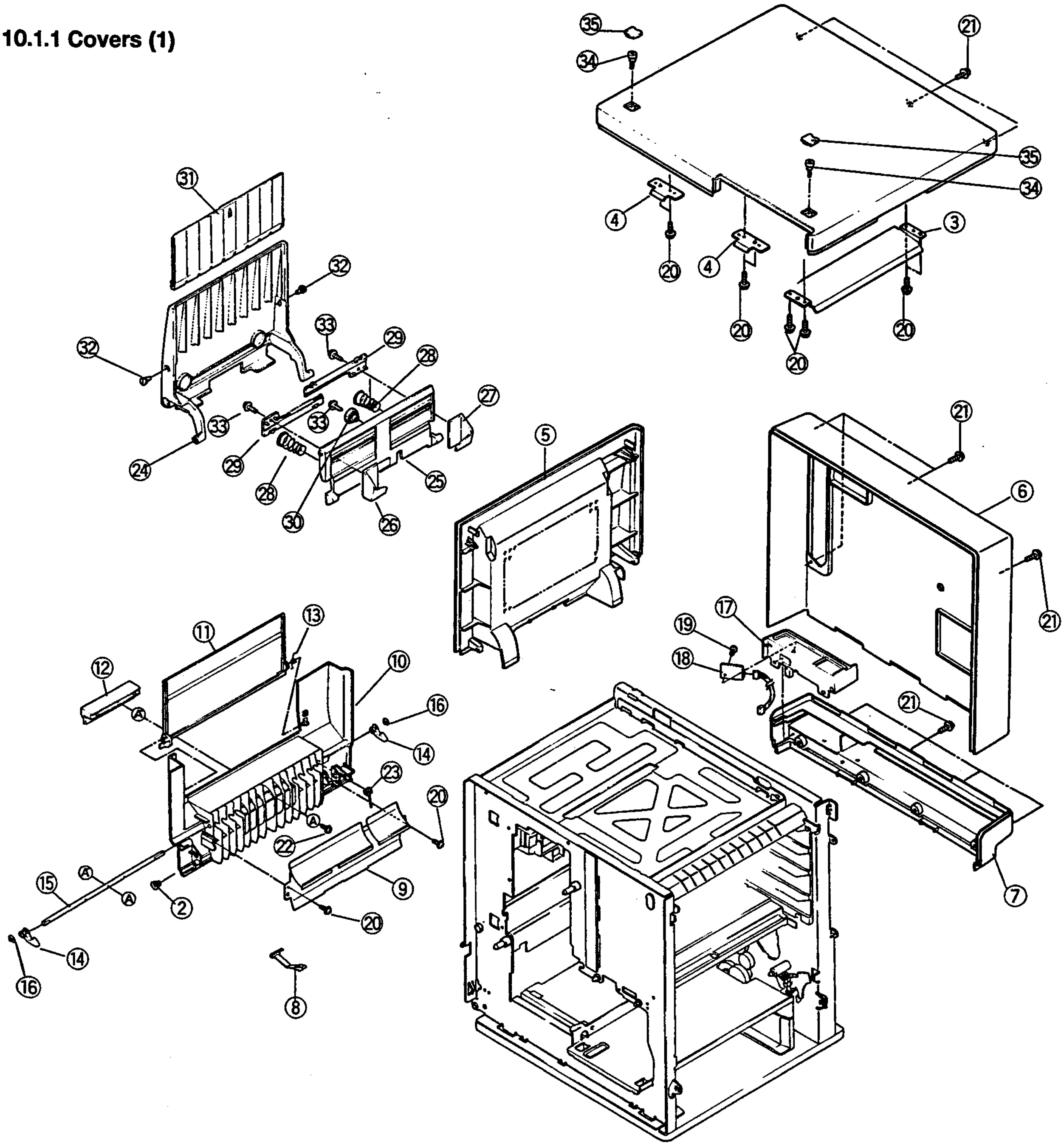
10. Replacement Parts List with Lubrication Guide

Notes:

1. Important safety notice.
   Components identified by ⚠ have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
2. The S mark is for service standard parts and may differ from production parts.
3. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

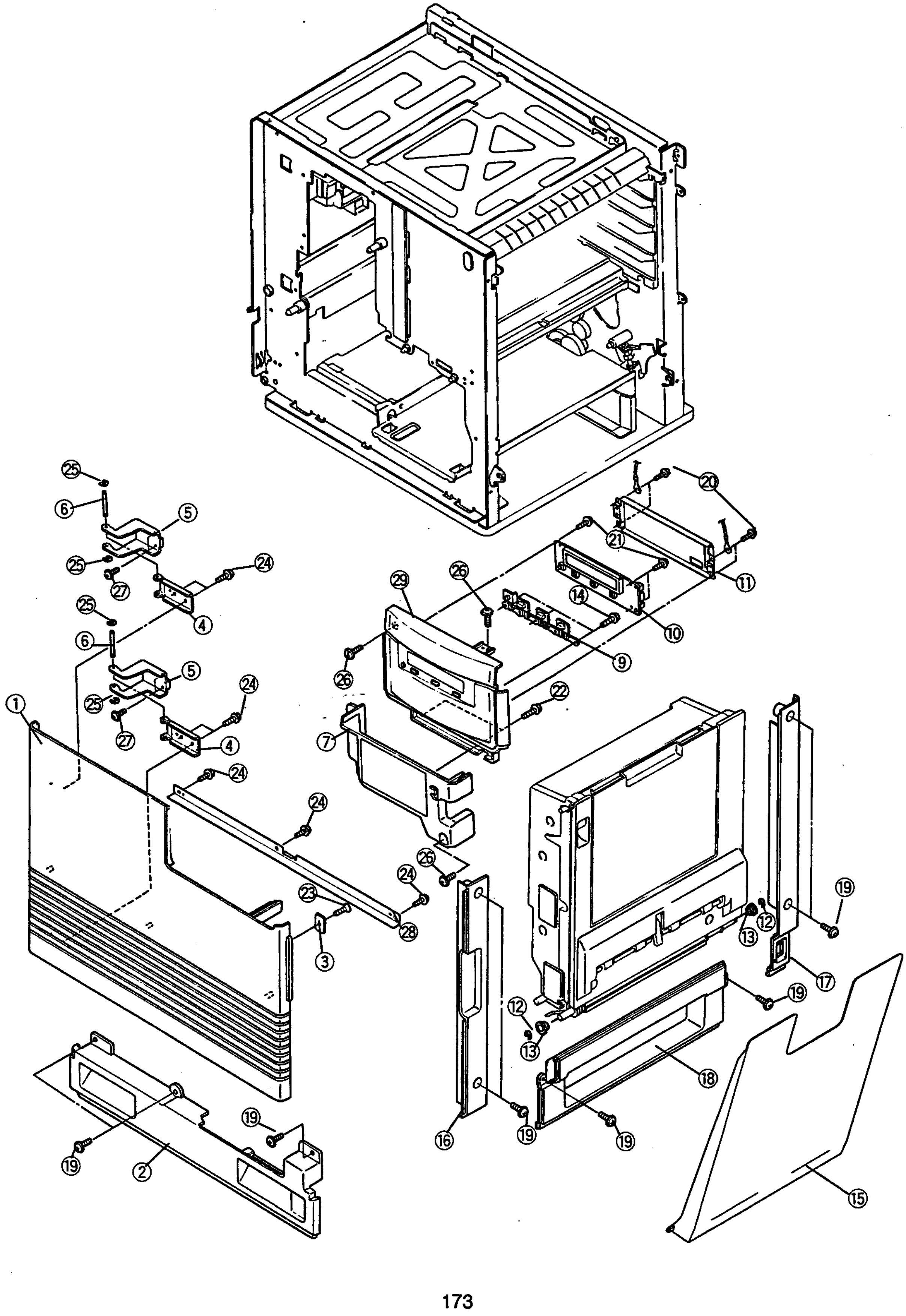
10.1 Covers

10.1.1 Covers (1)



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJYFPS8KM	Top Cover	1	
2	PJDS50711Z	Spring	1	
3	PJUG173Z	Paper Guide	1	
4	PJHM542Z	Top Cover Retainer	2	
5	PJYK7PS8KM	Left Side Cover	1	
6	PJYPPS8KM	Upper Rear Cover Assembly	1	
7	PJKMA0014Z-1	Lower Rear Cover	1	
8	PJHR9807Z	Strap	1	
9	PJZEPS8KM	Paper Chute Assembly	1	
10	PJKMA0010Z-1	Left Side Door	1	
11	PJYEPS8KM	Tray Cover Assembly	1	
12	PJHR9813Z-1	Tray Cover Lever	1	
13	PJDSA0079Z	Tray Cover Spring	1	
14	PJHR9812Z	Left Side Door Hook	2	
15	PJDF9353Z	Left Side Door Shaft	1	
16	XUC4VW-V	E-ring	2	
17	PJHRA0366Z	Temperature/Humidity Sensor Case	1	
18	PJRTH2Z	Temperature/Humidity Sensor Board	1	Non-Repairable
19	PJHR9471Z	Rivet	1	
20	XTW3+8S	Screw 3 x 8	10	
21	XTW3+U6L	Screw 3 x 6	11	
22	XTW3+12S	Screw 3 x 12	1	
23	PJDS7104Z	Spring	1	
24	PJKMA0007Z-1	Holder, Multi Purpose Tray	1	
25	PJYE1PS8KM	Paper Support Assembly, Multi Purpose Tray	1	
26	PJHRA0208Z-1	Paper Guide, Right	1	
27	PJHRA0207Z-1	Paper Guide, Left	1	
28	PJDSA0027Z	Paper Guide Spring	2	
29	PJDG50134Y	Rack	2	
30	PJDG50133Z	Pinion Gear	1	
31	PJKK168Z-2	Extension Tray	1	
32	PJHRA0321Z-1	Bushing	2	
33	XTW3+8F	Screw 3 x 8	3	
34	XTW4+V16L	Screw 4 x 10	2	
35	PJHRA0339Z	Seal Cap	2	

10.1.2 Covers (2)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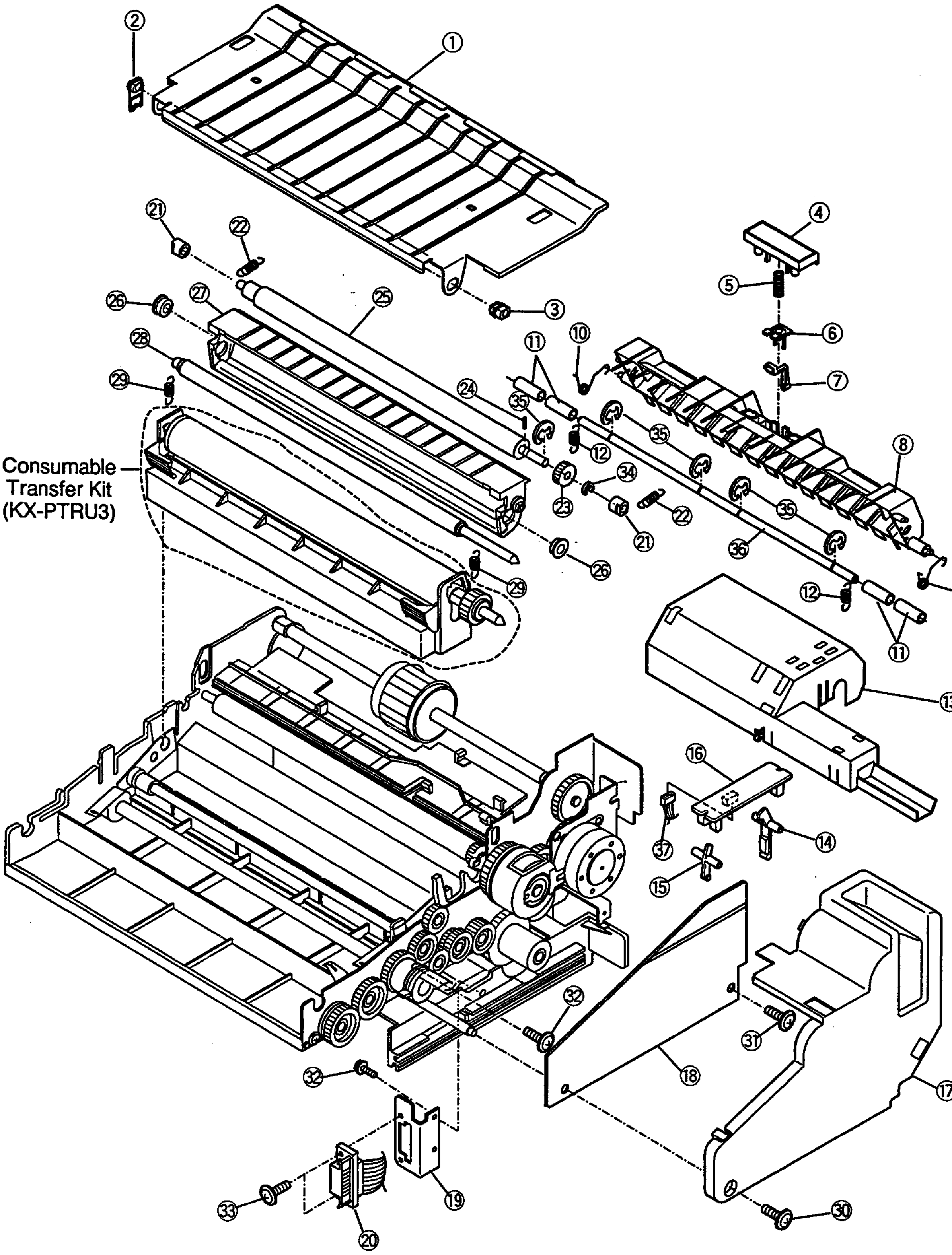
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJYE2PS8KM	Front Cover Assembly	1	
2	PJKF97V-1	Bottom Front Cover	1	
3	PJHM547Z	Magnet Retainer	1	
4	PJHM553Z	Front Cover Hinge Supporter	2	
5	PJHM552Z	Front Cover Hinge	2	
6	PJHM559Z	Hinge Shaft	2	
7	PJYE3PS8KM	Lower Operation Panel Cover	1	
8	PJYE8PS8KM	Operation Panel Cover	1	
9	PJHRA0173Y	Operation Button	1	
10	PJAYCM1Z	Printer LCD Board	1	Non-Repairable
11	PJMCA0002Z	LCD Board Bracket	1	
12	XUC6VW-V	Ering	2	
13	PJDJ08281CZ	Bushing	2	
14	XTW3+6S	Screw 3 x 6	3	
15	PJKMA0013Z	Paper Exit Tray	1	
16	PJKF95Z-1	Right Side Cover, Front	1	
17	PJKF96V-1	Right Side Cover, Rear	1	
18	PJKF98V-1	Right Side Cover, Lower	1	
19	XTW3+U6L	Screw 3 x 6	14	
20	XTW2+6F	Screw 2 x 6	4	
21	XTN2+6G	Screw 2 x 6	4	
22	XTW3+10S	Screw 3 x 10	2	
23	XTS3+8G	Screw 3 x 8	1	
24	XTW3+8S	Screw 3 x 8	4	
25	XUC3VW-V	E-ring	4	
26	XTW3+U8L	Screw 3 x 8	2	
27	XTW3+5L	Screw 3 x 5	4	
28	PJHM554Z	Door Reinforcement	1	
29	PJGKA0019Y	LCD Panel	1	

10.2 Paper Feeder

10.2.1 Paper Feeder (1)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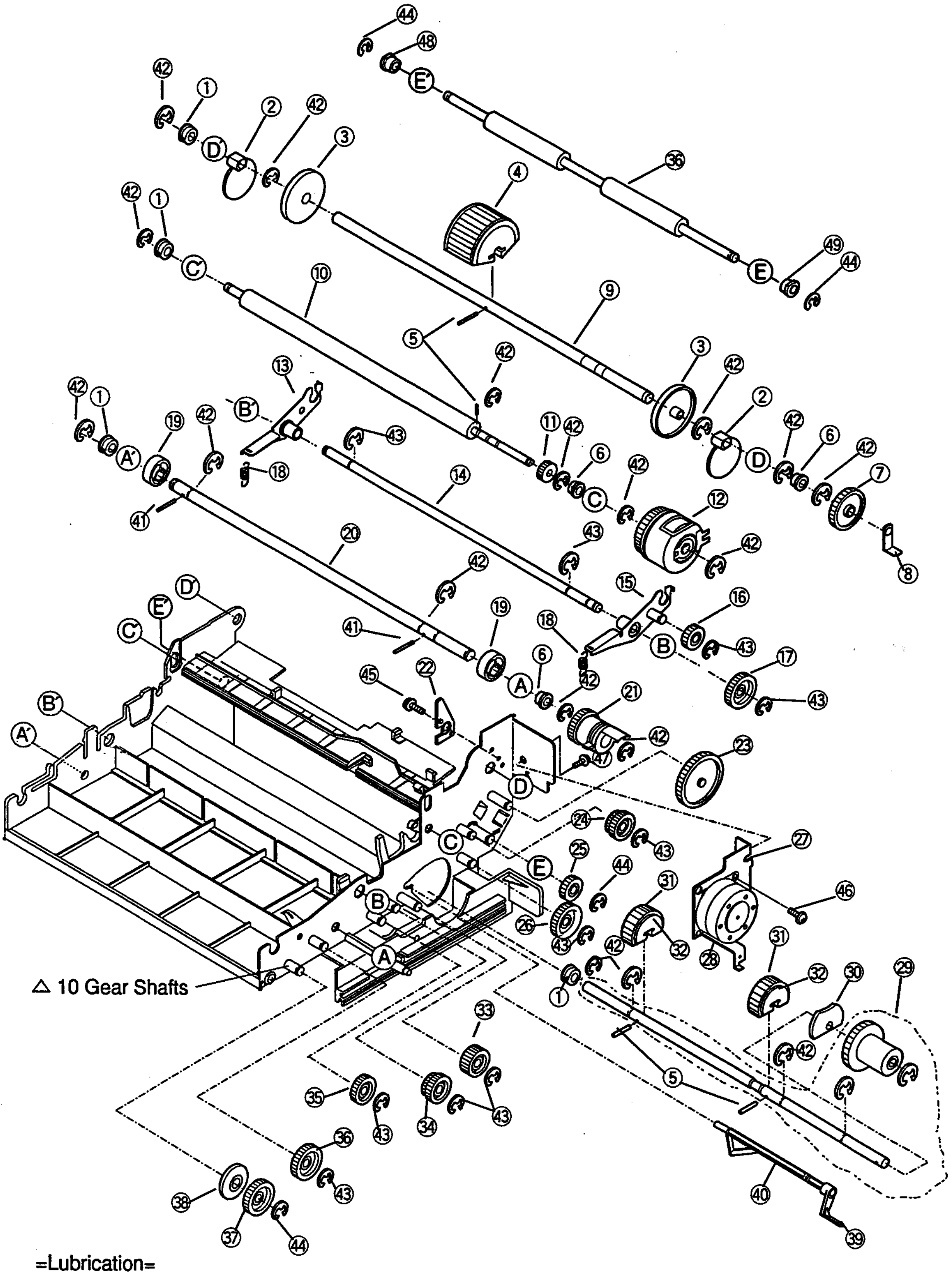
Consumable Transfer Kit (KX-PTRU3)

Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJZU8PS8KM	Paper Chute Assembly	1	
2	PJDJ05131RZ	Paper Chute Opening Adjuster	1	
3	PJDJ05171CZ	Bushing	1	
4	PJZE1PS8KM	Retard Pad Assembly	1	
5	PJDSA0028Z	Retard Pad Spring	1	
6	PJHRA0401Z	Retard Pad Platform	1	
7	PJHRA0350Z	Paper Thickness Select Lever	1	
8	PJZE2PS8KM	M.P.T. Chute Assembly	1	
9	PJDSA0063Z	M.P.T. Chute Spring, Right	1	
10	PJDSA0060Z	M.P.T. Chute Spring, Left	1	
11	PJDR88Z	Pinch Roller	4	
12	PJDSA0031Z	Pinch Roller Spring	2	
13	PJYK5PS8KM	M.P.T/Registration Senor Cover	1	
14	PJHRA0210Y	M.P.T Paper Out Sensor Arm	1	
15	PJHRA0211Z	Registration Sensor Arm	1	
16	PJWPDPS8KM	M.P.T Paper Out/Reg. Sensor Board	1	RTL
17	PJZE3PS8KM	Paper Feed Unit Cover	1	
18	PJWPGPS8KM	Paper Feed Unit Board	1	RTL
19	PJHM427X	Connector Bracket	1	
20	PJJRQ19001Z	Paper Feed Unit Coupling Connector (male)	1	
21	PJDJ05111RZ	Bushing	2	
22	PJDS3122Y	Registration Spring	2	
23	PJDG50391Z	Registration Roller Gear	1	
24	XPL2A10WVW	Pin	1	
25	PJDF9357Z	Registration Roller	1	
26	PJDJ06121RZ	Bushing	2	
27	PJZE4PS8KM	Cleaning Roller Holder Assembly	1	
28	PJDFA0045Z	Pressure Roller, Cleaning Roller	1	
29	PJDSA0032Z	Cleaning Roller Spring	2	
30	XTW3+14S	Screw 3 x 14	1	
31	XTW3+6L	Screw 3 x 6	1	
32	XTW3+10S	Screw 3 x 10	2	
33	XTW3+8L	Screw 3 x 8	2	
34	PJHR9257Z	Spacer	1	
35	XUC5VW-V	E-ring	5	
36	PJDFA0099Z	Pinch Roller Shaft	1	
37	PJJRZCP014Z	Resist Sensor Cable	1	

10.2.2 Paper Feeder (2)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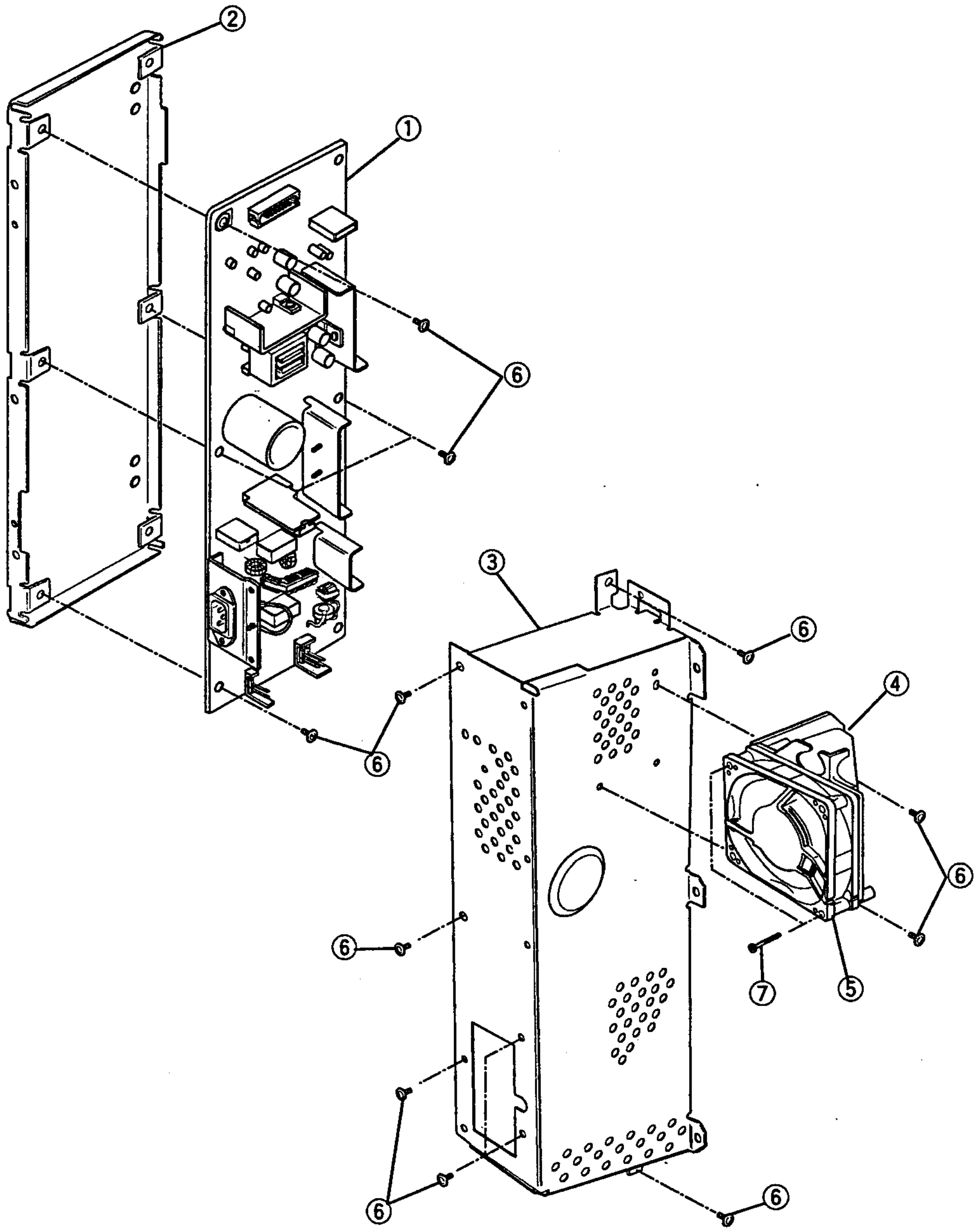
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJDJ08351RZ	Bushing	4	
2	PJDGA0051Z	Cam	2	
3	PJDRA0011Z	Pickup Guide Roller	2	
4	PJZRPS8KM	Pickup Roller Assembly, M.P.T	1	
5	XPL2A12WVW	Pin	4	
6	PJDJ08281CZ	Bushing	3	
7	PJDGA0047Z	Gear	1	
8	PJHR9808Z	STR Sensor Arm	1	
9	PJDFA0044Z	M.P.T Roller Shaft	1	
10	PJDR173X	Registration Roller	1	
11	PJDG50392Z	Registration Roller Gear	1	
12	PJDCA0002Z	Registration Roller Clutch	1	
13	PJZHPS8KM	STR Holder Assembly, Left	1	
14	PJDFA0050Z	STR Holder Shaft	1	
15	PJZH1PS8KM	STR Holder Assembly, Right	1	
16	PJDG50363Z	STR Gear	1	
17	PJDG50403Z	Gear	1	
18	PJDSA0033Z	Spring	2	
19	PJHR9815Z	STR Cam	2	
20	PJDFA0049Z	STR Cam Shaft	1	
21	PJDCA0003Z	STR Clutch	1	
22	PJHRA0315Z	M.P.T. Holder Guide	1	
23	PJDGA0080Z	Gear	1	
24	PJDG50397Z	Gear	1	
25	PJDG50399Z	Gear	1	
26	PJDG50402Z	Gear	2	
27	PJMDA0060Z	Motor Bracket, Paper Feed Unit	1	
28	PJJQP4220Y	Motor, Paper Feed Unit	1	
29	PJZFPS8KM	Clutch Assembly, Paper Feed Unit	1	
30	PJDJ08361RZ	Bushing	1	
31	PJHG990Y	Pickup Roller Rubber	2	
32	PJHR9794Z	Pickup Roller	2	
33	PJDG50408Z	Gear	1	
34	PJDG50393Z	Gear	1	
35	PJDG50404Z	Gear	1	
36	PJDR172Z	Paper Feed Roller	1	
37	PJDGA0109Y	Joint Gear	1	
38	PJDR169Z	Gear Guide Roller	1	
39	PJHRA0331Z	Paper Out Sensor Arm	1	
40	PJHRA0313Z	Paper Empty Sensor Arm	1	
41	XPL2A14WVW	Pin	2	
42	XUC6VW-V	E-ring	17	
43	XUC5VW-V	E-ring	9	
44	XUC4VW-W	E-ring	4	
45	XTW3+5L	Screw 3x5mm	1	
46	XTW3+6L	Screw 3x6mm	2	
47	XTS3+6F	Screw 3x6mm	1	
48	PJDJ06121RZ	Bearing	1	
49	PJDJ06061CZ	Bearing	1	

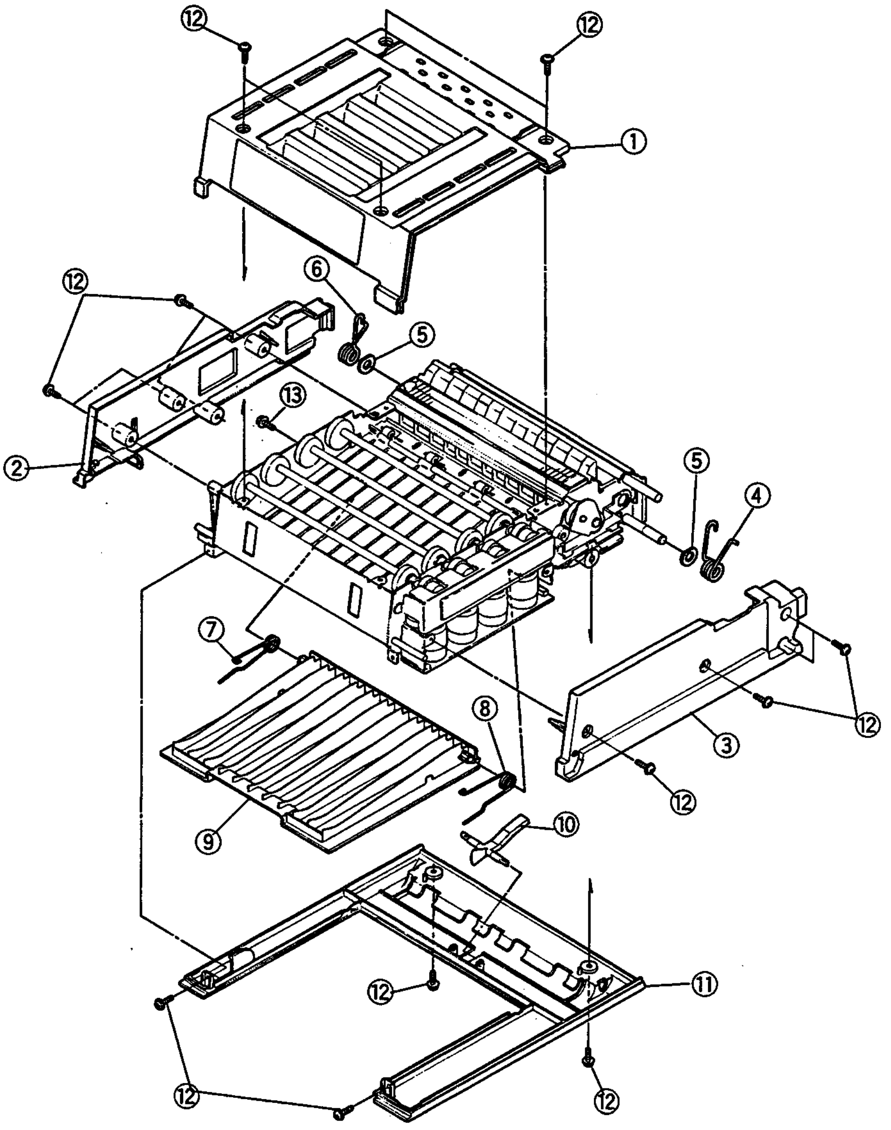
10.3 Power Supply Unit



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJLP1S25Z	Power Supply	1	⚠Non-Repairable
2	PJWC1PS8KM	Power Supply Frame	1	
3	PJWCPS8KM	Shield Cover	1	
4	PJHRA0347Z	Fan Motor Bracket	1	
5	PJJQD6023Z	Fan Motor	1	
6	XTW3+6L	Screw 3x6	13	
7	XTW3+25S	Screw 3x25	2	

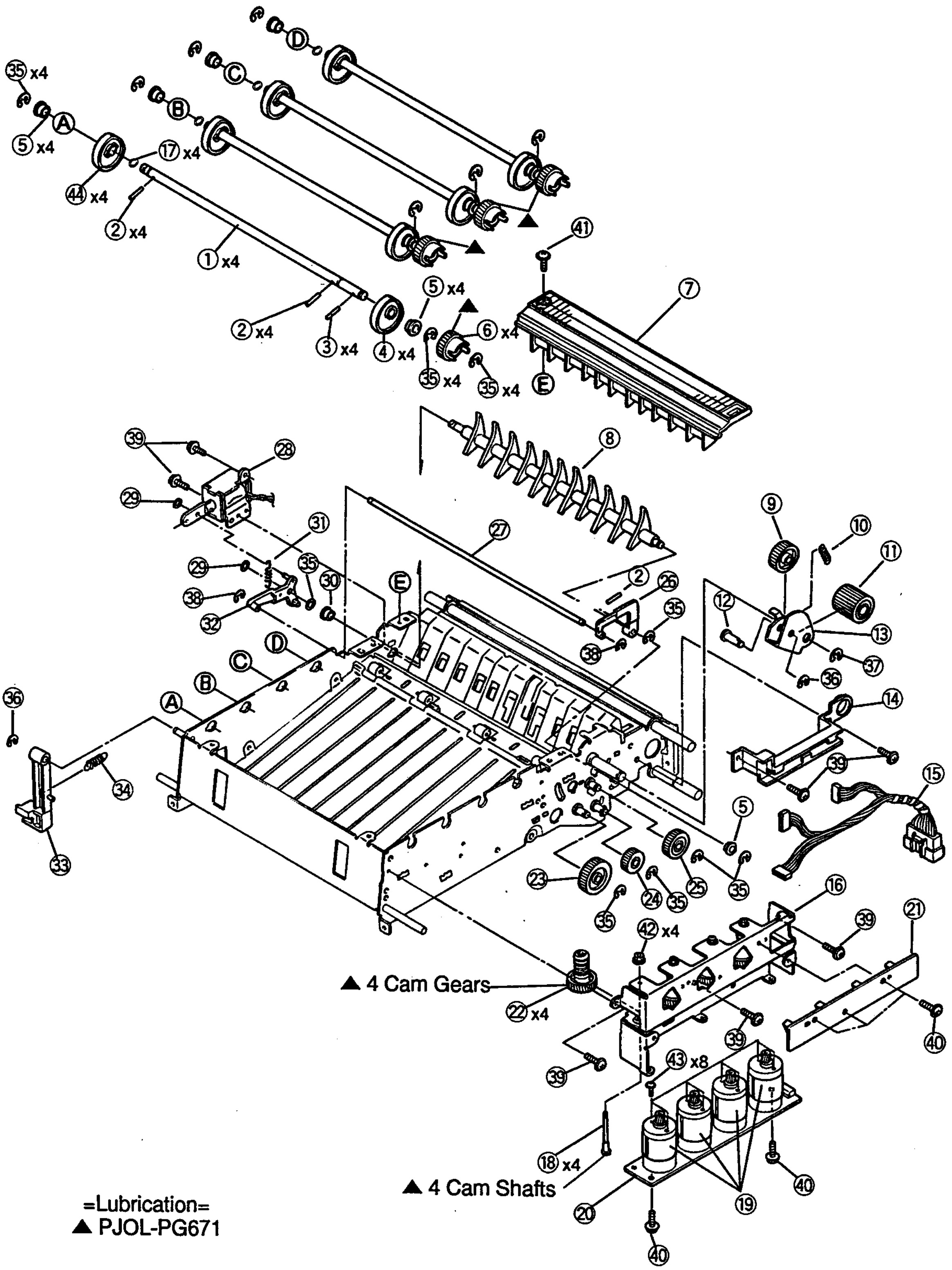
10.4 Toner Cartridge Selector/Paper Eject Unit

10.4.1 Toner Cartridge Selector/Paper-eject Unit (1)



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJYKPS8KM	Unit Inner Cover	1	
2	PJYK8PS8KM	Solenoid Side Cover	1	
3	PJKE207X-1	Motor Side Cover	1	
4	PJDSA0062Z	Spring	1	
5	PJHM577Z	Spacer	2	
6	PJDS7113Z	Spring	1	
7	PJDS9078Y	Cover Spring	1	
8	PJDS9077Y	Cover Spring	1	
9	PJKM95Y-1	Face Down Cover	1	
10	PJHRA0227Z	Paper Tray Full Sensor Arm	1	
11	PJKM96X-1	Unit Cover	1	
12	XTW3+8L	Screw 3 x 8	16	
13	XTW3+8F	Screw 3 x 8	1	

10.4.2 Toner Cartridge Selector/Paper Eject Unit (2)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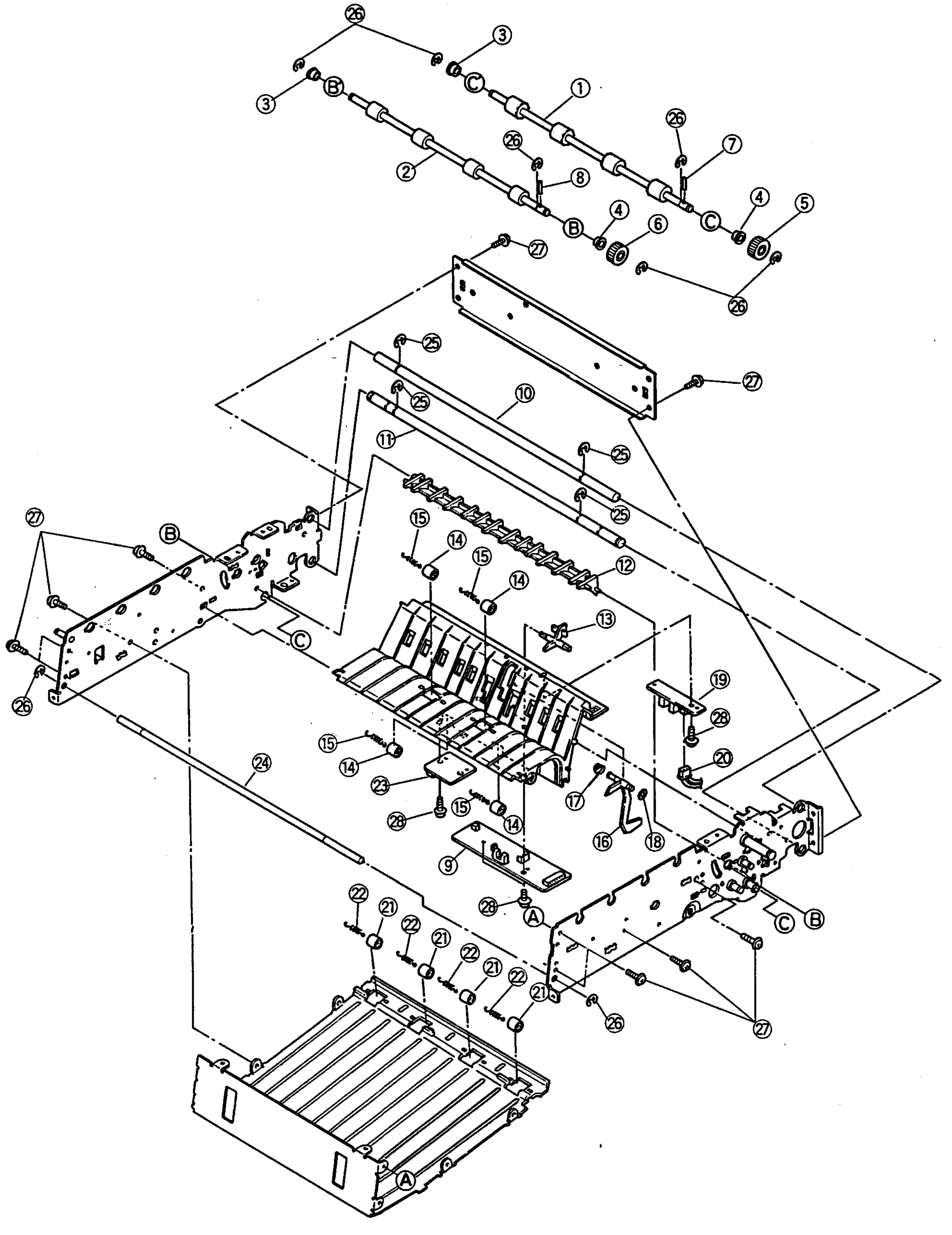
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJDFA0101Z	Toner Selector Shaft	4	
2	XPL2A10WVW	Pin	9	
3	PJHE6036Z	Pin	4	
4	PJDGA0084Y	Toner Selector Cam	4	
5	PJDJ06061CZ	Bushing	9	
6	PJDGA0085Z	Toner Selector Cam Gear	4	
7	PJHR9861Y	Upper Paper Ejection Guide	1	
8	PJHR9864Y	Face Down Switch Gate	1	
9	PJDG50366Z	Gear	1	
10	PJDS5251Z	Joint Gear Spring	1	
11	PJDG50365Z	Gear	1	
12	PJDF9370Z	Joint Gear Shaft	1	
13	PJMDA0130Z	Joint Gear Braket	1	
14	PJHR3148Z	Relay Cable Bracket	1	
15	PJJRZCP003Z	Cable	1	
16	PJHM486Y	Cam Motor Bracket	1	
17	PJNWA0001Z	Plastic Washer	4	
18	PJDF9448Z	Cam Shaft	4	
19	PJWQPS8KM	Cam Motor	4	
20	PJWPAPS8KM	Cam Motor Board with Motor	1	RTL
21	PJWPJPS8KM	Toner Cartridge Movement Sensor Board	1	
22	PJDG50372Z	Cam Gear	4	
23	PJDG50369Z	Gear	1	
24	PJDG50363Z	Gear	1	
25	PJDG50386Z	Gear	1	
26	PJHRA0226Z	Switch Back Arm	1	
27	PJDFA0051Z	Switch Back Shaft	1	
28	PJWZPS8KM	Solenoid Assembly	1	
29	PJNW525Z	Plastic Washer	1	
30	PJDJ06121RZ	Bushing	1	
31	PJDSA0094Z	Spring	1	
32	PJHRA0225Z	Switch Back Arm	1	
33	PJHR9870Z-1	Release Lever	1	
34	PJDS5252Z	Spring	1	
35	XUC5VW-V	E-ring	17	
36	XUC4VW-V	E-ring	2	
37	XUC6VW-V	E-ring	1	
38	XUC2VW-V	E-ring	2	
39	XTW3+6L	Screw 3 x 6	7	
40	XYN3+F8	Screw 3 x 8	5	
41	XTW3+8L	Screw 3 x 8	1	
42	PJHE7001Z	Nut	4	
43	XYN26+K5	Screw 26x 5	8	
44	PJHGA0115Y	Developer Cam	4	

10.4.3 Toner Cartridge Selector/Paper Eject Unit (3)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Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJDR179Y	Paper Ejection Roller	1	
2	PJDR178Z	Paper Ejection Roller	1	
3	PJDJ06121RZ	Bushing	2	
4	PJDJ06061CZ	Bushing	2	
5	PJDG50364Z	Gear	1	
6	PJDG50368Z	Gear	1	
7	PJHE6035Z	Pin	1	
8	XPJ2A8VW	Pin	1	
9	PJWPEPS8KM	Paper Ejection Sensor Board	1	RTL
10	PJDF9372Z	Stopper Shaft	1	
11	PJDFA0156Z	Supporter Shaft	1	
12	PJHR9868Z	Lower Paper Ejection Guide	1	
13	PJHRA0299Z	Paper Exit Sensor Arm	1	
14	PJDRA0015Z	Guide Roller	4	
15	PJDS2081Z	Guide Roller Spring	4	
16	PJHRA0228Z	Paper Ejection Sensor Arm	1	
17	PJDS9019Z	Spring	1	
18	PJNWA0012Z	Plastic Washer	1	
19	PJWPFPS8KM	Paper Exit Sensor Board	1	RTL
20	PJJRL03002Z	Cable	1	
21	PJDRA0015Z	Roller	4	
22	PJDSA0104Z	Spring	4	
23	PJWPHPS8KM	Paper Tray Full Sensor Board	1	RTL
24	PJDF9373Z	Hook Shaft	1	
25	XUC6VW-V	E-ring	4	
26	XUC5VW-V	E-ring	8	
27	XTW3+6L	Screw 3 x 6	12	
28	XTW3+8F	Screw 3 x 8	4	

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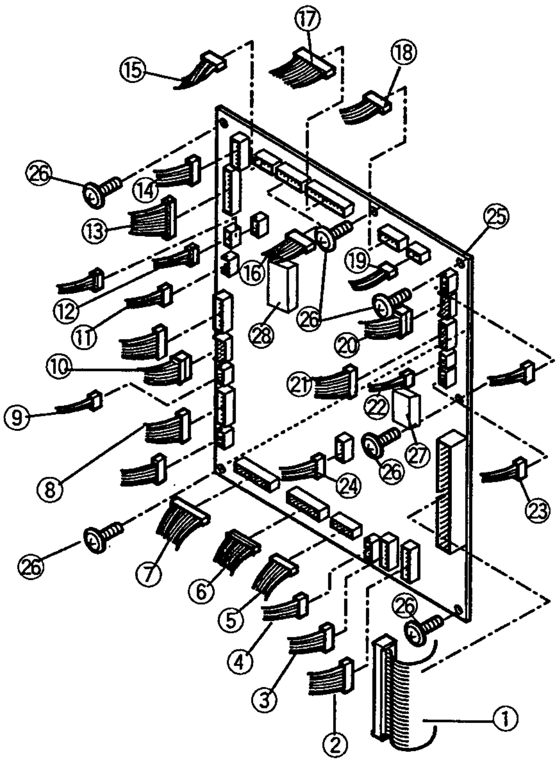
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJSG9021Z	LSU (Laser Scanning Unit)	1	
2	PJZBPS8KM	Front Panel Cable Cover	1	
3	PJLPDH27Z	High Voltage Board	1	Non-Repairable
4	PJMDA0176Z	Switch Cover Plate	1	
5	PJMDA0123Z	ROM Access Panel	2	
6	PJMCA0007Z	EMI Plate	1	
7	PJWPPS8KM	Printer Main Control Board	1	RTL
8	PJJQD6218Z	Main Motor	1	
9	PJZH7PS8KM	Main Motor Bracket	1	
10	PJJQD6219Z	Paper Feed Motor	1	
11	PJHR9903Y	Ozone Fan Motor Bracket	1	
12	PJJQD8024Z	Ozone Fan Motor	1	
13	PJZE11PS8KM	Fuser/Toner Cartridge Fan Motor Bracket	1	
14	PJJQD8024Z	Fuser/Toner Cartridge Fan Motor	1	
15	PJUL148Y	Cleaning Board Bracket	1	
16	PJWP14P7430M	Cleaning Board	1	RTL
17	PJZE12PS8KM	Drive Unit Cover	1	
18	XYC3+FF10	Screw 3 x 10	8	
19	PJMCA0028Z	Engine Control Board Shield Cover	1	
20	PJHRA0462Z	Sheet	1	
21	PJMCA0025Z	Flat Cable Shield Plate	1	
22	PJUSA0037Z	Earth Plate	1	
23	PJUSA0041Z	Earth Plate	1	
24	PJUSA0040Z	Earth Plate	1	
25	PJDFA0157Z	Polygon Motor Heat Sink Shaft	1	
26	PJDSA0101Z	Polygon Motor Heat Sink Spring	1	
27	XTW3+6L	Screw 3 x 6	72	
28	XYN4+F14	Screw 4 x 14	3	
29	XSB3+6	Screw 3 x6	1	
30	XTW3+U4L	Screw 3 x 4	6	
31	XUC7VW-V	E-ring	1	
32	XTW3+35S	Screw 3 x 35	4	
33	XYC3+FF8C	Screw 3 x 8	2	
34	PJHRA0368Z	Cable Clamp	1	
35	PJMDA0134Z	Option Cover	1	
36	PJHR9260Z-1	Pcb Support Handle	1	
37	XTW3+U6L	Screw 3 x6	1	
38	PJZE10PS8KM	Access Cover Assembly	1	
39	XTW3+U6L	Screw3x6	5	
40	PJDJ08281CZ	Bushing	1	
41	PJHRA0324Z	Fastner	1	
42	PJMCA0024Z	Flat Cable Cover	1	
43	PJHD1220Z	PCB Stud	1	
44	PJZH8PS8KM	RIB Plate Assembly	1	
45	PJWP2PS8KM	Network Relay Board	1	RTL
46	PJMDA0133Z	RIB Board Roll	1	
47	XTW3+8L	Screw3x8	7	
48	PJWP1PS8KM	Hsync Board	1	
49	XSN25+6F	Screw25x6	4	
50	XYN3+F8	Screw3x8	1	
51	PJWP3PS8KM	Printer Panel Relay Board	1	RTL
52	PJDGA0111Z	Main Gear	1	
53	XUC5VW-V	E-ring	1	
54	PJWIPS8KM	ROM (IC5)	1	
55	PJWI1PS8KM	ROM (IC6)	1	
56	PJVI93LC86P	EEPROM (IC9)	1	
57	PJWWPS8KM	LCD Harness	1	

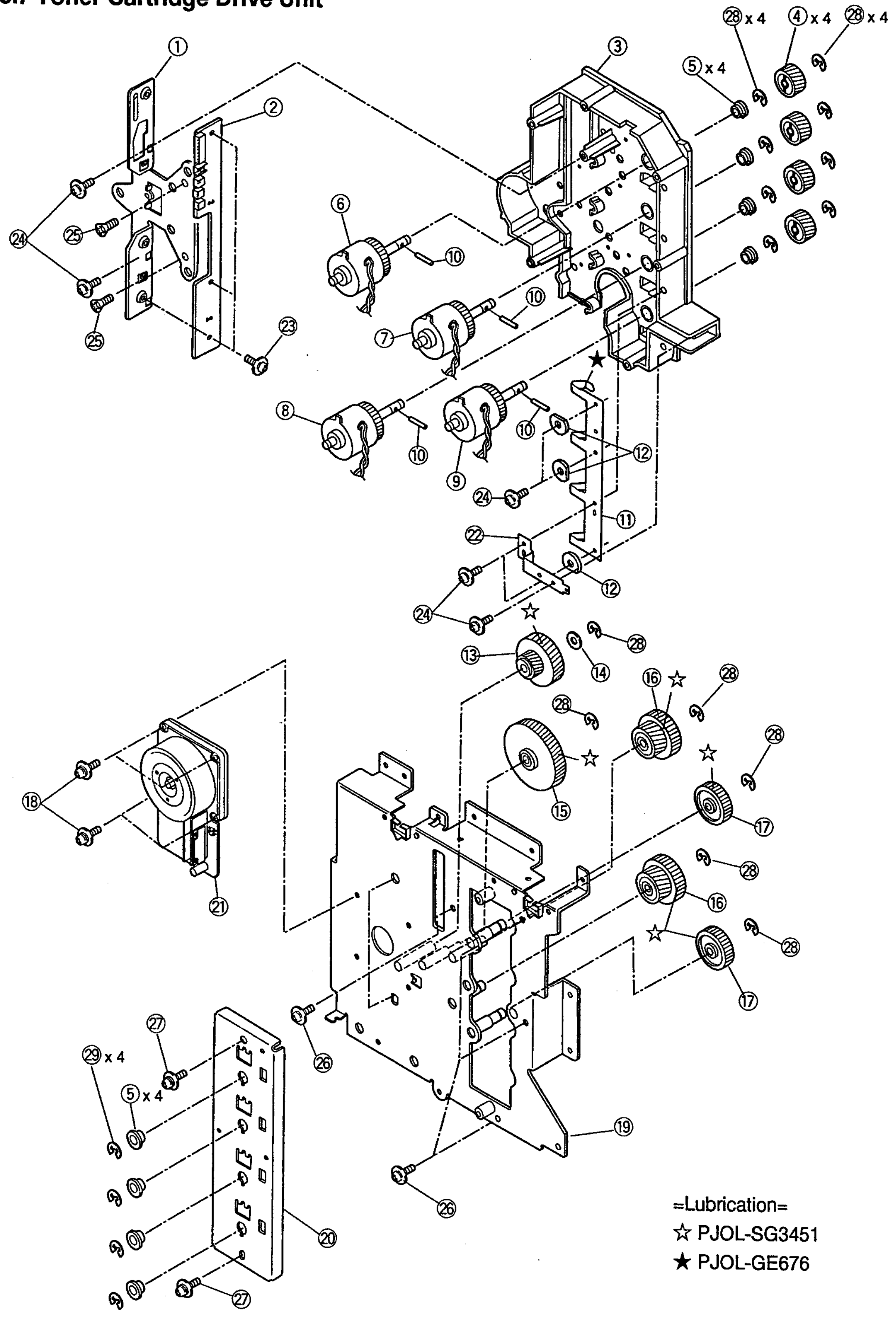
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
58	PJJUA0037Z	RIP Chassis	1	
59	PJJUA0038Z	RIP Cover	1	
60	PJMDA0107Z	Board Bracket	2	
61	PJJRZCP004Z	HUU Cable	1	
62	PJJR02001Z	HVU Cable	1	

10.6 Engine Control Board Connector



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJJRR4002Z	Flat Cable	1	
2	PJJRZCP020Z	Cable	1	
3	PJJRZCP017Z	Cable	1	
4	PJJRZCP016Z	Cable	1	
5	PJJRQ12001Z	Cable	1	
6	PJJRQ17001Z	Cable	1	
7	PJJRQ20001Z	Cable	1	
8	PJJRZCP019Z	Cable	1	
9	PJJRQ02001Z	Cable	1	
10	PJJRZCP002Z	Cable	1	
11	PJJRF02002Z	Cable	1	
12	PJJRF02004Z	Cable	1	
13	PJJRL09001Z	Cable	1	
14	PJJRL05002Z	Cable	1	
15	PJJRL04003Z	Cable	1	
16	PJJRZCP018Z	Cable	1	
17	PJJRZCP022Z	Cable	1	
18	PJJRL05001Z	Cable	1	
19	PJJRZCP012Z	Cable	1	
20	PJJRQ09001Z	Cable	1	
21	PJJRQ13002Z	Cable	1	
22	PJJRQ02002Z	Cable	1	
23	PJJRZCP013Z	Cable	1	
24	PJJRZCP015Z	Cable	1	
25	PJWPKPS8KM	Engine Control Board	1	RTL
26	XYC3+FF8C	Screw 3 x 10	6	
27	PJWI3PS8KM	EPROM (IC6)	1	
28	PJVIX24C04P	EEPROM (IC4)	1	

10.7 Toner Cartridge Drive Unit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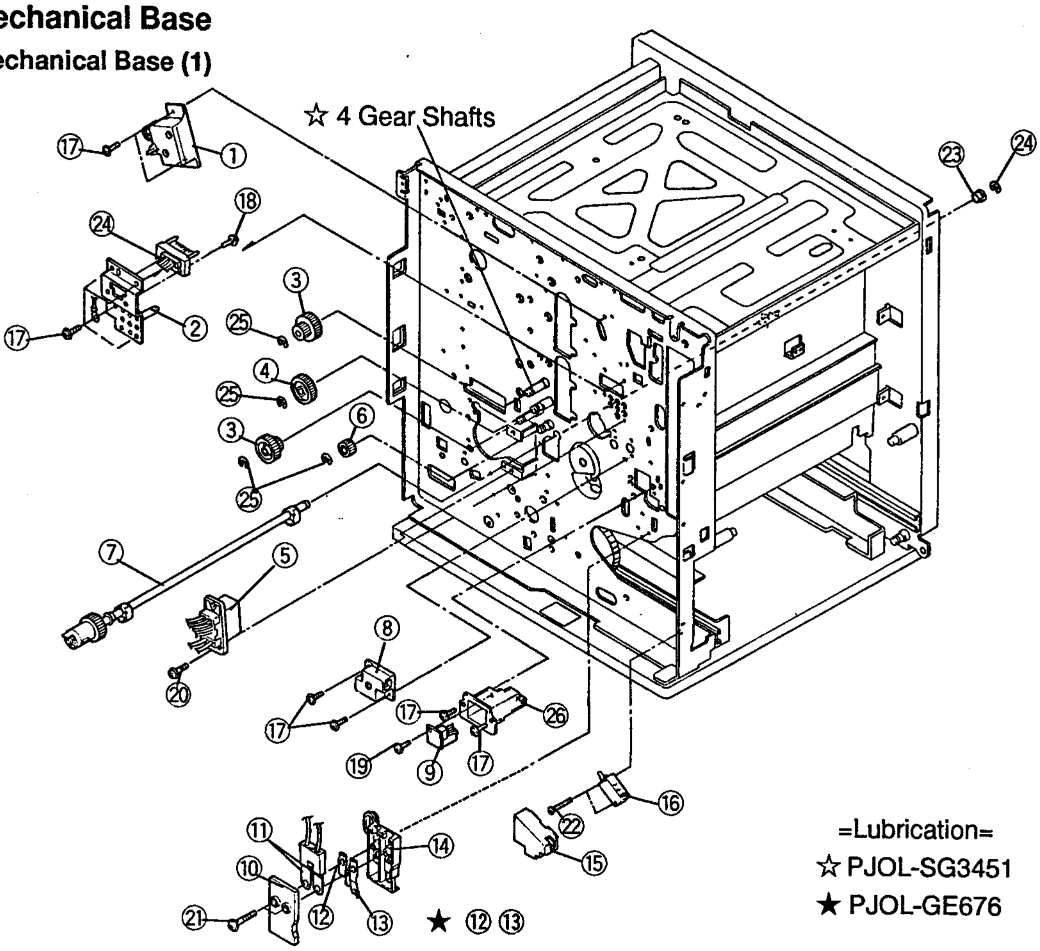
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJHM443Y	Toner Sensor Bracket	1	
2	PJWPBPS8KM	Toner Sensor Board	1	
3	PJHRA0311Z	Drive Unit Case	1	
4	PJDG50376Z	Clutch Drive Gear	4	
5	PJDJ06061CZ	Bushing	8	
6	PJWMP8475U	Clutch Assembly, Black	1	
7	PJWM3P8475U	Clutch Assembly, Cyan	1	
8	PJWM2P8475U	Clutch Assembly, Magenta	1	
9	PJWM1P8475U	Clutch Assembly, Yellow	1	
10	PJHE6036Z	Pin	4	
11	PJHM444Z	Bias Plate	1	
12	XTW3	Washer	3	
13	PJDG9042Z	Drive Gear	1	
14	PJNW624Z	Washer	1	
15	PJDG9043Z	Gear	1	
16	PJDG50463Z	Gear	2	
17	PJDG50375Z	Gear	2	
18	XYC3+FF10	Screw 3 x 10	4	
19	PJZE5PS8KM	Drive Unit Bracket	1	
20	PJMD9247Z	Clutch Bracket	1	
21	PJJQD6225Z	Toner Cartrige Drive Motor (Sleeve Motor)	1	
22	PJHM445Z	Bias Plate	1	
23	XTW3+6L	Screw 3 x 6	3	
24	XTW3+8S	Screw 3 x 8	7	
25	XTS3+10C	Screw 3 x 10	2	
26	XTS3+10S	Screw 3 x 10	6	
27	XYC3+FF8C	Screw 3 x 8	2	
28	XUC5VW-V	E-ring	14	
29	XUC4VW-V	E-ring	4	

10.8 Mechanical Base

10.8.1Mechanical Base (1)



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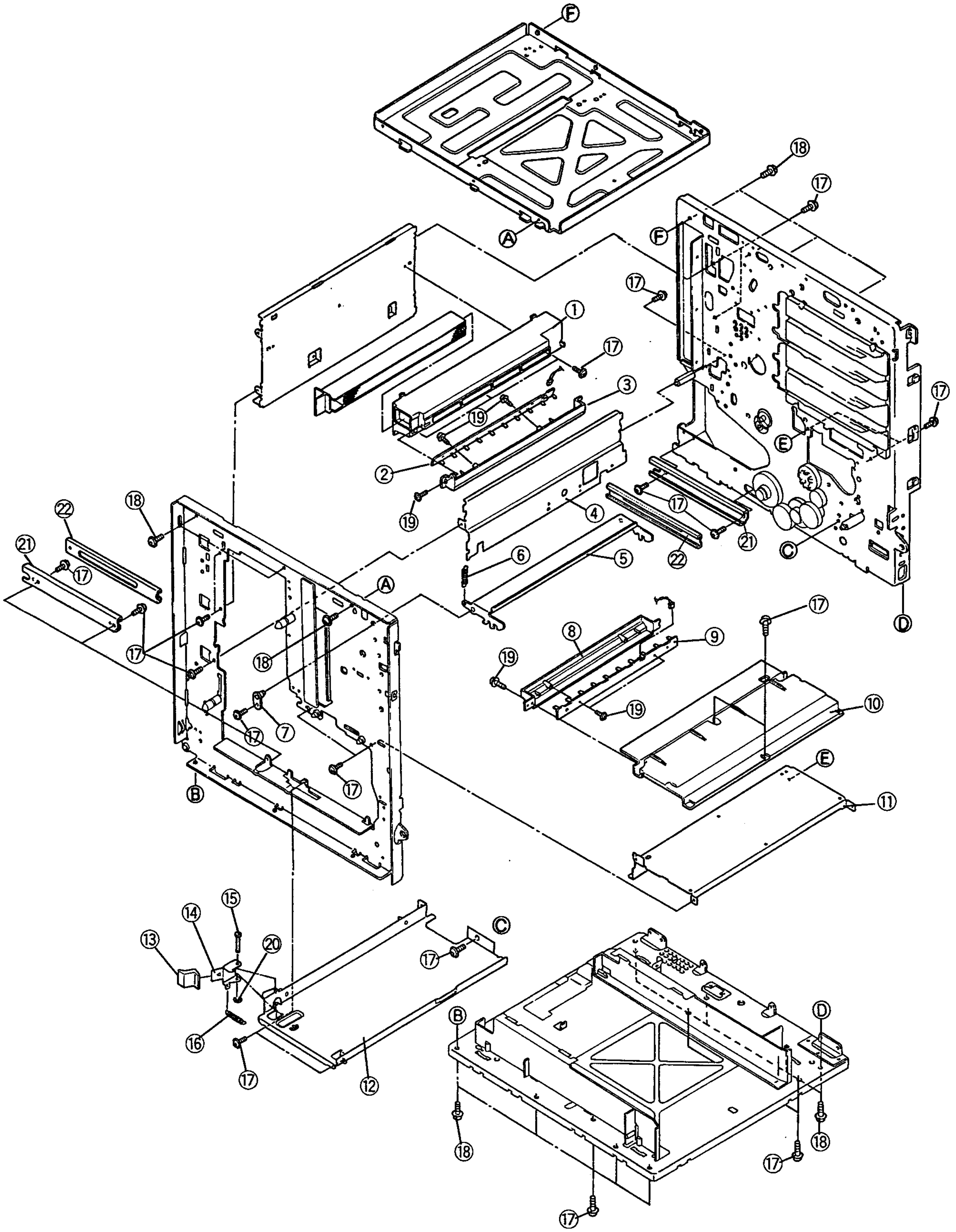
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJWEPS8KM	High Voltage Terminal Unit	1	
2	PJZE6PS8KM	Drawer Holder	1	
3	PJDG50377Z	Gear	2	
4	PJDG50375Z	Gear	1	
5	PJJRZCP002Z	Fuser Unit Coupling Connector	1	
6	PJDG50378Z	Gear	1	
7	PJZFP7430M	Cleaning Clutch/Shaft Assembly	1	
8	PJWE1PS8KM	FTR Bias Terminal Unit	1	
9	PJWP6P7430M	Home Sensor Board	1	
10	PJHRA0222Z	Terminal Cover	1	
11	PJHM421Z	Terminal	2	
12	PJUSA0027Z	Terminal	1	
13	PJUSA0026Z	Terminal	1	
14	PJHRA0223Z	Terminal Cover	1	
15	PJHR9914Z	Switch Cover	1	
16	AM51662C531	Switch	1	
17	XTW3+6L	Screw 3 x 6	10	
18	XTW3+8L	Screw 3 x 8	2	
19	XTW3+6S	Screw 3 x 6	1	
20	XTW4+10L	Screw 4 x 10	2	
21	XTW3+16L	Screw 3 x 16	2	
22	XYC3+FF16	Screw 3 x 16	2	
23	PJDJ08281CZ	Bushing	1	
24	PJJRQ09001Z	Imaging Unit Coupling Connector	1	
25	XUC5VW-V	E-ring	4	
26	PJHR9833Z	Home Sensor Case	1	

10.8.2 Mechanical Base (2)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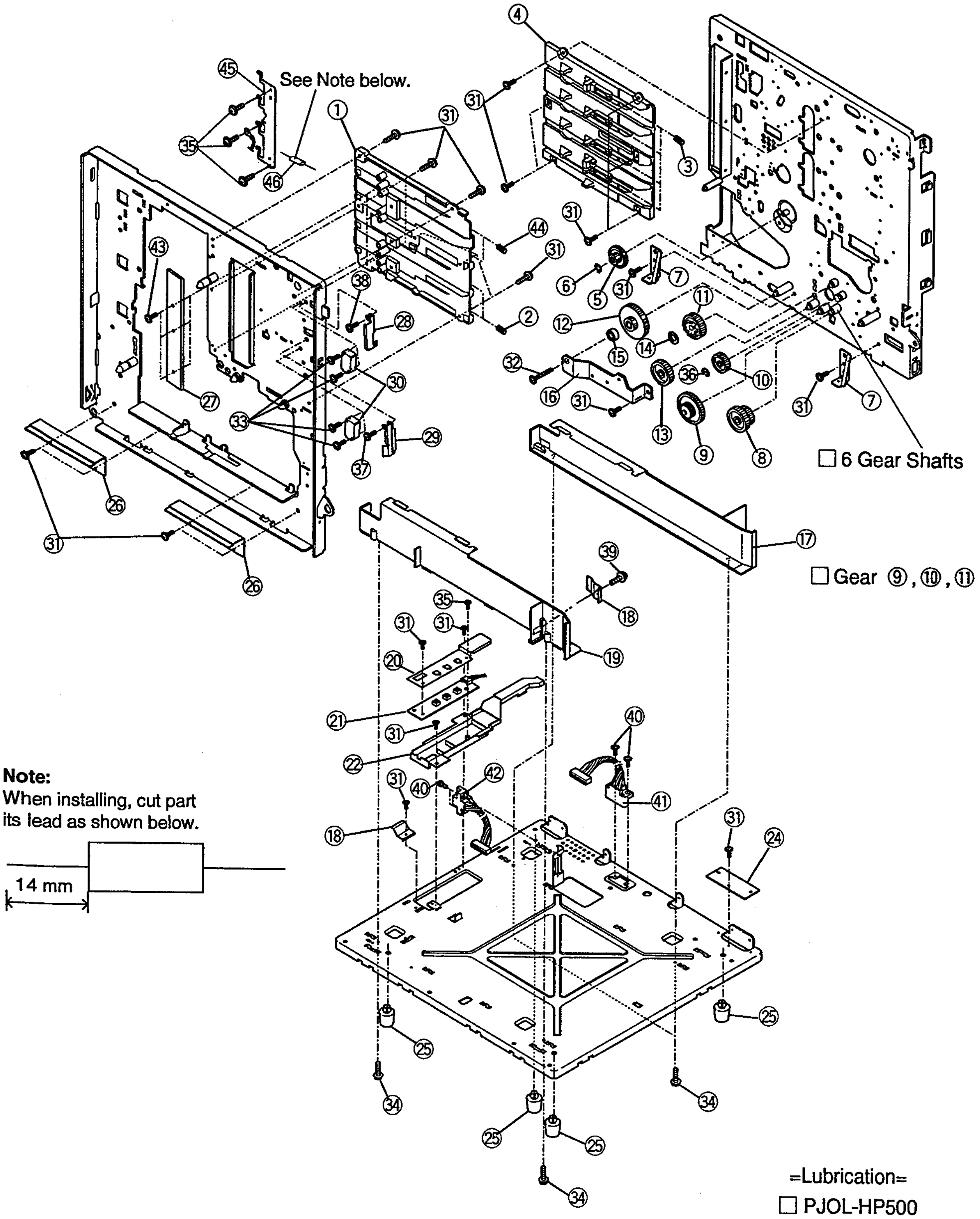
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJHR9785Z	Ozone Filter Holder	1	
2	PJWPLPS8KM	Pre-exposure Eraser Board	1	RTL
3	PJHR9784Z	Eraser Board Cover	1	
4	PJUC73Z	Process Unit Guide Rail	1	
5	PJHM447Z	Lock Lever	1	
6	PJDS5250Z	Lock Lever Spring	1	
7	PJZL7P8475U	Lock Lever Support	1	
8	PJHR9787Z	Pre-Transfer Board Cover	1	
9	PJWPMPS8KM	Pre-Transfer Board	1	RTL
10	PJHR9788Z	Frame	1	
11	PJHM478Z	Frame	1	
12	PJHM475Z	Fuser Guide Frame	1	
13	PJHR9892Z-1	Knob	1	
14	PJHM476Z	Stopper Lever	1	
15	PJDF9424Z	Stopper Lever Shaft	1	
16	PJDS4244Z	Spring	1	
17	XTW3+6L	Screw 3 x 6	26	
18	XTW4+8L	Screw 4 x 8	14	
19	XTW3+8S	Screw 3 x 8	6	
20	XUC3VW-V	E-ring	1	
21	PJHM508Z	Rail Support	2	
22	PJHM431	Side Rail Plate	2	

10.8.3 Mechanical Base (3)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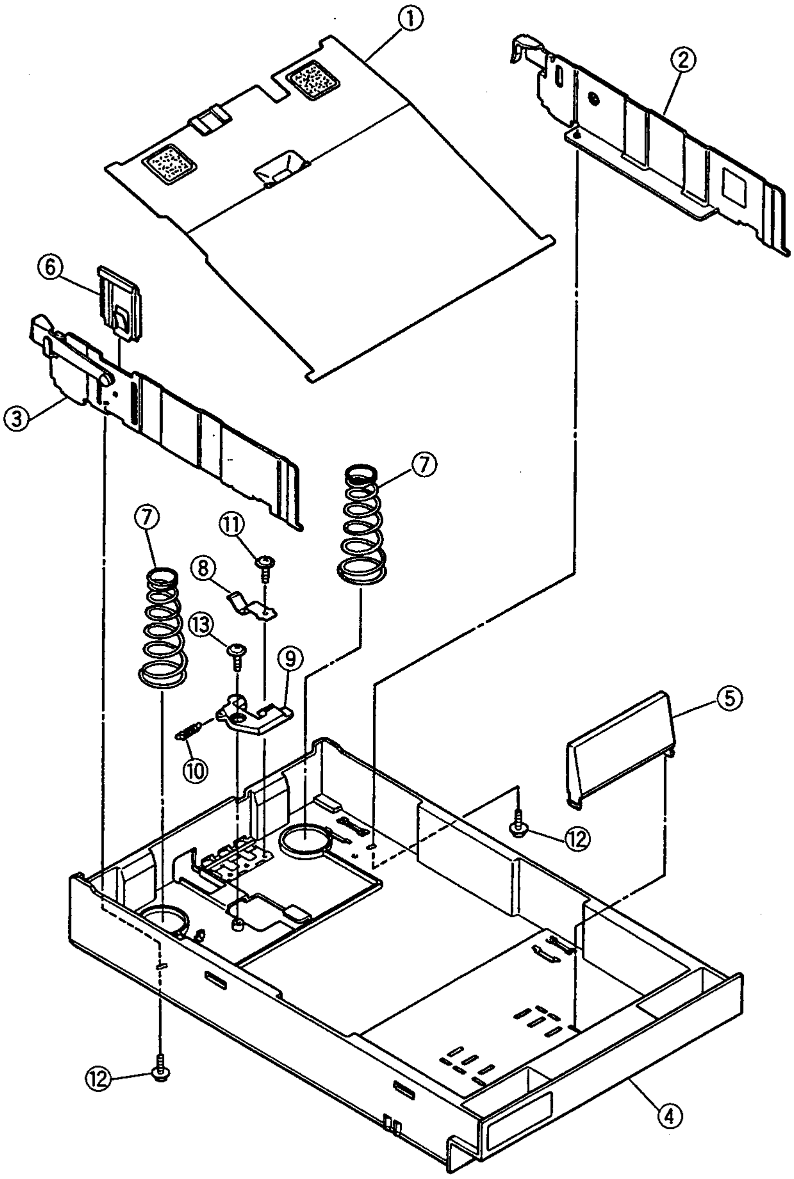
Note:
When installing, cut part its lead as shown below.

=Lubrication=
☐ PJOL-HP500

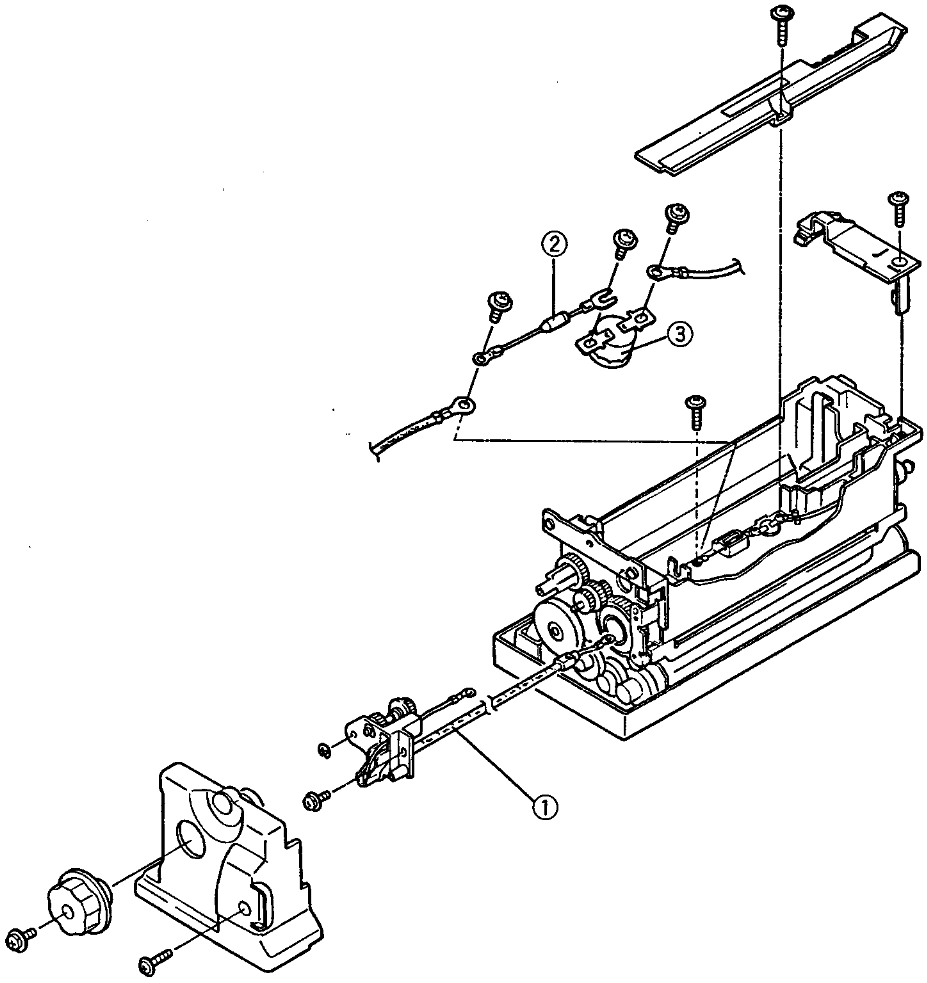
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJHRA0292T	Toner Cartridge Guide Rail	1	
2	PJDSA0109Z	Spring	3	
3	PJDSA0110Z	Spring	4	
4	PJZE13PS8KM	Toner Cartridge Guide Rail Ass'y	1	
5	PJDGA113Z	Gear	1	
6	PJHE6056Z	Washer	1	
7	PJMDA0169Z	Corner Bracket	2	
8	PJDG50390Z	Gear	1	
9	PJDG50405Z	Gear	1	
10	PJDG50389Z	Gear	1	
11	PJDG50388Z	Gear	1	
12	PJDG50407Z	Gear	1	
13	PJDG50406Z	Gear	1	
14	PJNW912Z	Washer	1	
15	PJDR168Z	Spacer	1	
16	PJHM426Z	Gear Bracket	1	
17	PJKM94Y-1	Cassette Guide	1	
18	PJUS219Z	Cassette Lock Spring	2	
19	PJKM97Y-1	Cassette Guide	1	
20	PJHR8125Z	Cassette Detection Sensor Board Cover	1	
21	PJWP18P7430M	Cassette Detection Sensor Board	1	RTL
22	PJHR9795Z	Cassette Detection Sensor Board Case	1	
23	PJMDA0169Z	Corner Plate	2	
24	PJMDA0124Z	Plate	1	
25	PJHG353Z	Rubber Foot	4	
26	PJMDA0125Z	Plate	2	
27	PJWP20P7430M	Toner Cartridge Sensor Board	1	
28	PJMDA0114Z	Interlock Switch Arm	1	
29	PJMDA0115Z	Interlock Switch Arm	1	
30	AM51630C531	Interlock Switch	2	
31	XTW3+6L	Screw 3 x 6	18	
32	XYN3+F10	Screw 3 x 10	1	
33	XYC3+F16	Screw 3 x 16	4	
34	XTW3+12S	Screw 3 x 12	4	
35	XTW3+8S	Screw 3 x 8	4	
36	XUC5VW-V	E-ring	1	
37	PJNEA0040Z	Screw	1	
38	PJHD800Z	Screw	1	
39	XTW3+10F	Screw 3 x 10	1	
40	PJNEA0033Z	Screw	4	
41	PJJRQ12001Z	Option Second Feeder Coupling Connector	1	
42	PJJRQ17001Z	Paper Feed Coupling Connector	1	
43	XTW3+10S	Screw 3 x 10	3	
44	PJDS4280Y	Spring	1	
45	PJUSA0032Z	Bias Plate	1	
46	ERC12GK226V	Resistor	1	

10.9 Paper Cassette



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJZU3P8475U	Base Plate Assembly	1	
2	PJZU7PS6KM	Paper Guide (R)	1	
3	PJZU5P8475U	Paper Guide (L)	1	
4	PJYMPS8KM	Paper Cassette Base	1	
5	PJHR9797Y	Paper End Plate	1	
6	PJUS220Y	Side Pressure Spring	1	
7	PJDSA0006Z	Friction Spring	2	
8	PJUS221Z	Cassette Switch Spring	1	
9	PJHR9811Z	Base Plate Holder Arm	1	
10	PJDS3123Z	Holder Arm Spring	1	
11	XTW3+6S	Screw 3x6	1	
12	XTW3+U6L	Screw 3x6	2	
13	XTW3+8F	Screw 3x8	1	

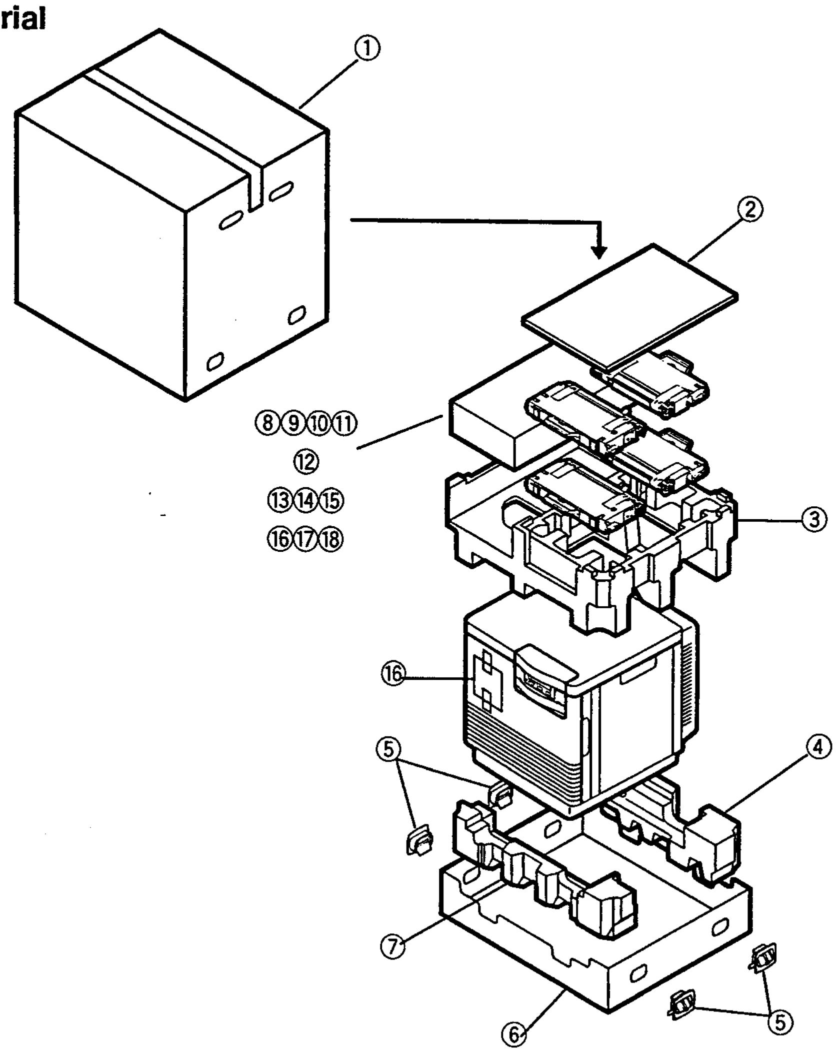
10.10 Fuser Unit



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJAH06001Z	Heat Lamp	1	⚠
2	PJXE10R16901	Thermal Fuse	1	⚠
3	PJSE180001Z	Thermostat	1	⚠

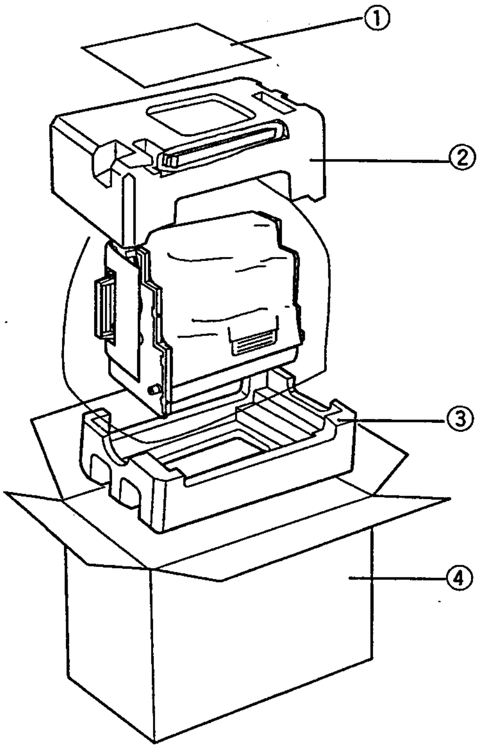
10.11 Packing Material

10.11.1 Printer



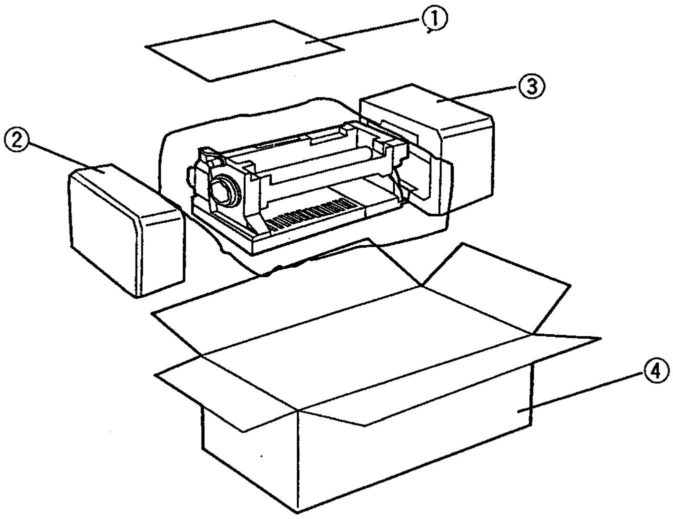
Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJPGA0099Z	Upper Carton	1	
2	PJPEA0033Z	Top Pad	1	
3	PJPNA0033Z	Upper Pad	1	
4	PJPNA0032Z	Rear Lower Pad	1	
5	HP-601W2	Joint	4	
6	PJPGA0029Z	Lower Carton	1	
7	PJPNA0031Z	Front Lower Pad	1	
8	PJPKA0047Z	Accessary Box	1	
9	PJPEA0035Z	Accessary Box Inner Partition	1	
10	PJQQA0064Z	Quick Reference Guide	1	
11	PJWR3PS8KM	Instruction CD-ROM	1	
12	PJWRPS8KM	Bundle Soft 1 (Corel Photo Paint)	1	
13	PJWR1PS8KM	Bundle Soft 2 (OCR Soft)	1	
14	PJWR2PS8KM	Driver Utility	1	
15	PJQHA0048Z	Color Calibration Card	1	
16	PJQTA0280Z	Tag	1	
17	PJJA127Z	AC Cord	1	
18	PJJBSA001Z	SCIC Cable	2	

10.11.2 Imaging Unit and Ozone Filter



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJQMA0290Z	Manual	1	
2	PJPN908Y	Upper Pad	1	
3	PJPN909Y	Rear Pad	1	
4	PJPKA0101Z	Carton	1	

10.11.3 Fuser Unit



Ref.No.	Part No.	Part Name and Description	Per Set	Remarks
1	PJQMA0293Z	Manual	1	
2	PJPNA0027Z	Front Pad	1	
3	PJPNA0028Z	Rear Pad	1	
4	PJPKA0149Z	Carton	1	

ORDER NO.KM69711888A8

Service Manual

Simplified

Digital Color Imaging System

KX-PS8000

Printer Section

⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Please file and use this manual together with the service manual for Model No. KX-PS8000, Order No. KM69709588C1.

This service manual indicates the main differences from original KX-PS8000 (Printer Section) for United Kingdom, Germany and South Africa.

■Specifications

	Original	for United Kingdom, Germany and South Africa
Voltage	120 VAC ±10 %	220-240 VAC ±10 %
Frenquency	60 Hz	50/60 Hz

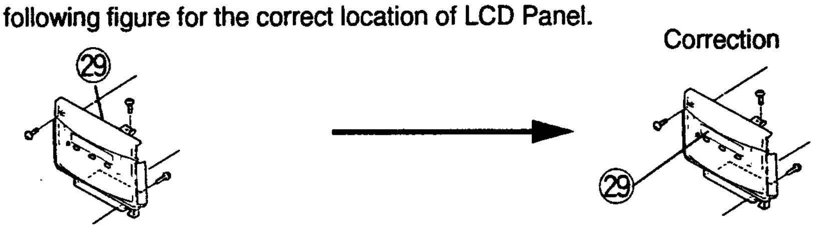
■Replacement Parts List

●10.1.1 Covers (1)

Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
172	6	PJYPPS8KM	PJYPPS8KU	Upper Rear Cover Assembly [United Kingdom]	1	
		PJYPPS8KM	PJYPPS8KG	Upper Rear Cover Assembly [Germany]	1	
		PJYPPS8KM	PJYPPS8KSA	Upper Rear Cover Assembly [South Africa]	1	

●10.1.2 Covers (2)

Refer to the following figure for the correct location of LCD Panel.



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
174	14	XTW3+6S	XTW3+8S	Screw 3 x 8	3	
174	15	PJKMA0013Z	PJKMA0013Z-1	Paper Exit Tray	1	

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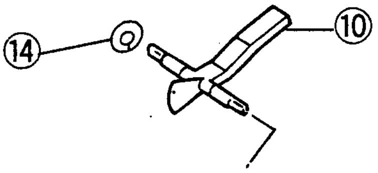
● 10.2.2 Paper Feeder (2)

Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
178	22	PJHRA0315Z	PJHRA0315Y	M.P.T. Holder Guide	1	
178	44	XUC4VW-W	XUC4VW-V	E-ring	4	

● 10.3 Power Supply Unit

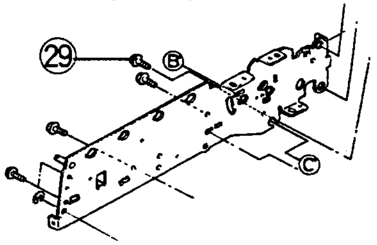
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
179	1	PJLP1S25Z	PJLP2S26Y	Power Supply	1	⚠ Non-Repairable
179	3	PJWCPS8KM	PJMCA0027Z	Shield Cover	1	
179	8	XBA1C100NU	(not installed)		0	
179	9	PJXB1063ND01	PJXB2063TJ01	Fuse (F203)	1	⚠

● 10.4.1 Toner Cartridge Selector/Paper-eject Unit (1)



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
180	10	PJHRA0227Z	PJHRA0227Y	Paper Tray Full Sensor Arm	1	
180	11	PJKM96X-1	PJKM96W-1	Unit Cover	1	
180	14	—	PJNWA0041Z	Plastic Washer	1	

● 10.4.3 Toner Cartridge Selector/Paper Eject Unit (3)

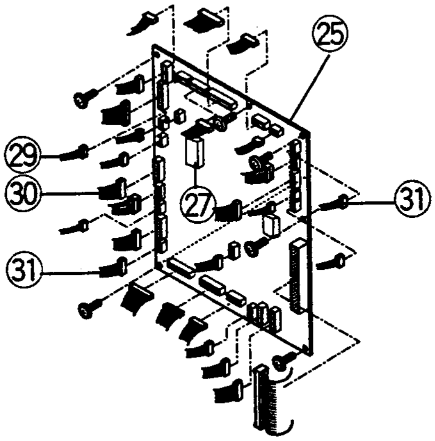


Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
184	13	PJHRA0299Z	PJHRA0229Z	Paper Exit Sensor Arm	1	
184	29	—	XTW3+10F	Screw 3 x 10	1	

● 10.5 Upper, Rear and Left Side Parts

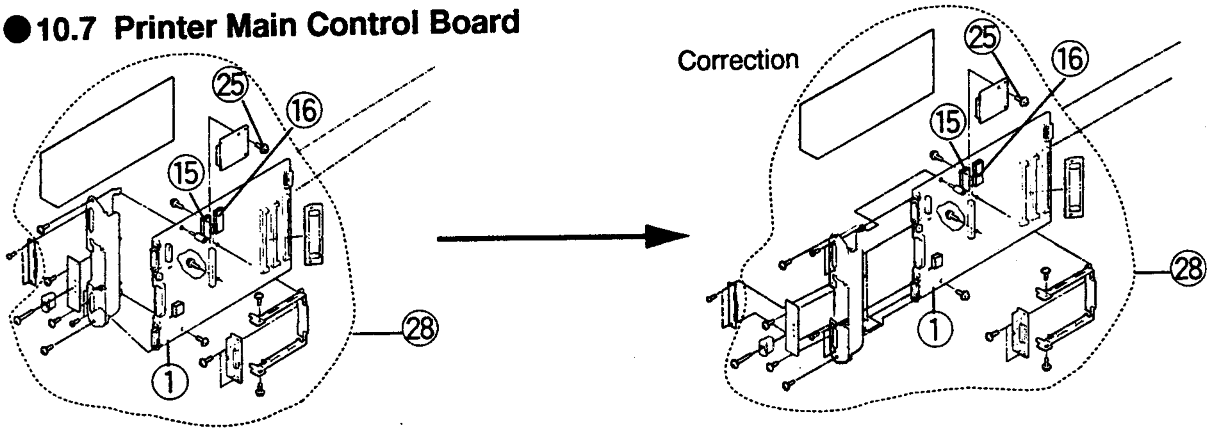
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
186	1	PJSG9021Z	PJWE5PS8KU	LSU (Laser Scanning Unit)	1	

●10.6 Engine Control Board Connector



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
187	25	PJWPKPS8KM	PJWPKPS8KU	Engine Control Board	1	RTL
187	27	PJWI3PS8KM	PJWI3PS8KU	ROM (IC4)	1	
187	29	—	PJJQD6023Z	Cable	1	
187	30	—	PJJRZCP021Z	Cable	1	
187	31	—	PJJQD8024Z	Cable	2	

●10.7 Printer Main Control Board



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
188	1	PJWPPS8KM	PJWPPS8KU	Printer Main Control Board	1	
			PJWPPS8KG	Printer Main Control Board [Germany]	1	
188	15	PJWIPS8KM	PJWIPS8KU	ROM (IC5)	1	
188	16	PJWI1PS8KM	PJWI1PS8KU	ROM (IC6)	1	
188	25	XYN3+F8	XYC3+FF8	Screw 3 x 8	1	
188	28	PJWPNPS8KM	PJWPNPS8KU	Main Control Board Assembly	1	RTL
			PJWPNPS8KG	Main Control Board Assembly [Germany]	1	RTL

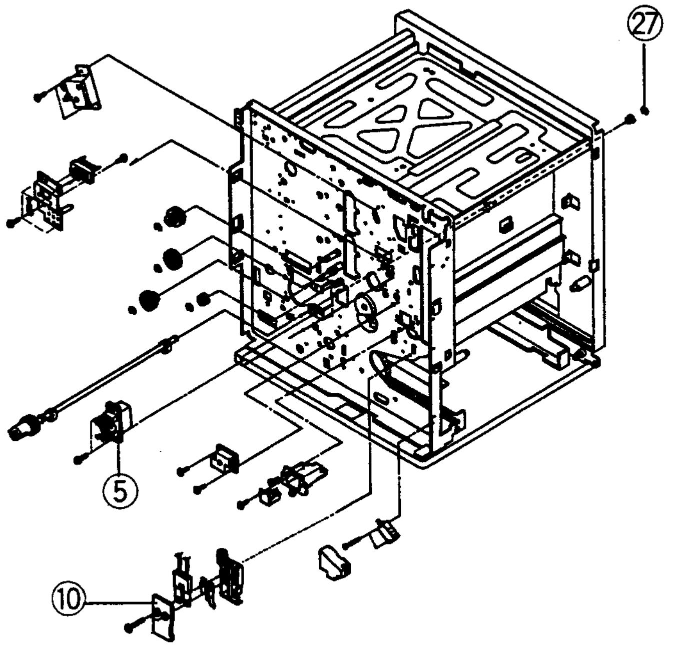
●10.8 Toner Cartridge Drive Unit

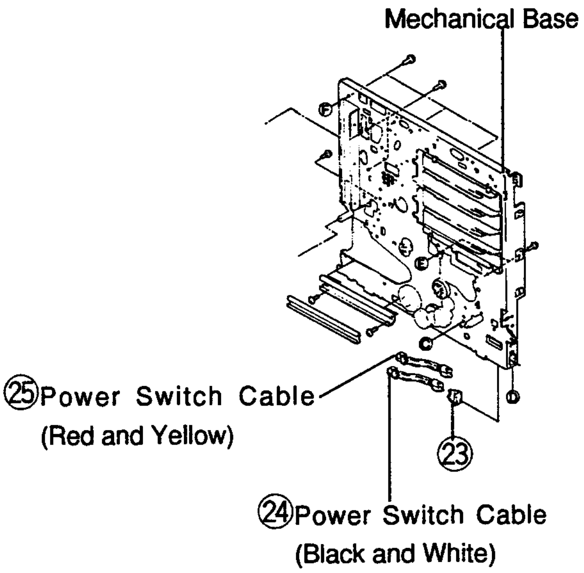
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
190	3	PJHRA0311Z	PJZEBPS8KM	Drive Unit Case	1	

● 10.9.1 Mechanical Base (1)/10.9.2 Mechanical Base (2)

See the figure on the page 191.

See the figure on the page 192.





Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
191	5	PJJRZCP002Z	PJJRZCP002Y	Fuser Unit Coupling Connector	1	
	10	PJHRA0222Z	PJZECPS8KM	Terminal Cover	1	
	27	—	XUC6VW-V	E-ring	1	
193	23	PJSP1013Z	PJSP1022Z	Power Switch	1	⚠
	25	—	PJJRZCP011Z	Power Switch Cable	1	

● 10.9.3 Mechanical Base (3)/10.10 Paper Cassette/10.11 Fuser Unit/10.12 Packing Material

Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
195	33	XYC3+F16	XYC3+LF16	Screw 3 x 1 6	4	
195	44	PJDS4280Y	PJDSA0122Z	Spring	1	
196	2	PJZU7PS6KM	PJZU7PS8KM	Paper Guide (R)	1	
196	4	PJYMPS8KM	PJYMPS8KU	Paper Cassette Base	1	
196	5	PJHR9797Y	PJHR9797Z-1	Paper End Plate	1	
197	1	PJAH06001Z	PJAH06002Z	Heat Lamp	1	⚠
198	1	PJPGA0099Z	PJZPPS8KU	Upper Carton [United Kingdom, Germany]	1	
198	10	PJQQA0064Z	PJQQA0070Y	Setup Manual [Germany]	1	
			PJQQA0070Z	Setup Manual	1	
198	14	PJWR2PS8KM	PJWR2PS8KG	Driver Utility [Germany]	1	
198	15	PJQHA0048Z	PJZEAPS8KM	Color Calibration Card	1	
198	17	PJJA127Z	PJJABFC001Z	AC Cord [United Kingdom]	1	
			PJJA115Y	AC Cord [South Africa, Germany]	1	
199	1	PJQMA0290Z	PJQMA0295Z	Manual	1	
199	4	PJPKA0101Z	PJPKA0137Z	Carton	1	
199	1	PJQMA0293Z	PJQMA0331Z	Manual	1	
199	4	PJPKA0149Z	PJPKA0107Z	Carton	1	

ORDER NO.KM69801898A8

Service Manual

Simplified

Digital Color Imaging System

KX-PS8000

Printer Section

⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Please file and use this manual together with the service manual for Model No. KX-PS8000, Order No. KM69709588C1.

This service manual indicates the main differences from original KX-PS8000 (Printer Section) for Australia, Denmark, Finland, Norway and Sweden.

■Specifications

	Original	for Australia, Denmark, Finland, Norway and Sweden
Voltage	120 VAC ±10 %	220-240 VAC ±10 %
Frenquency	60 Hz	50/60 Hz

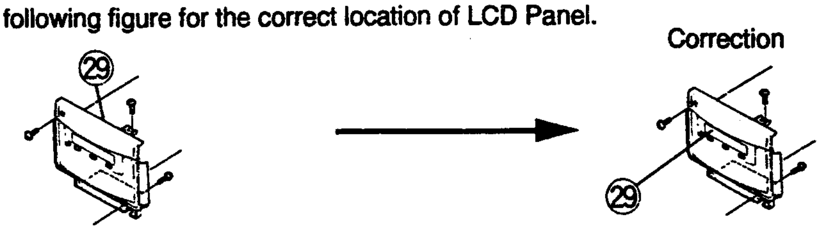
■Replacement Parts List

●10.1.1 Covers (1)

Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
172	6	PJYPPS8KM PJYPPS8KM	PJYPPS8KA PJYPPS8KY	Upper Rear Cover Assembly [Australia] Upper Rear Cover Assembly	1 1	

●10.1.2 Covers (2)

Refer to the following figure for the correct location of LCD Panel.



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
174	14	XTW3+6S	XTW3+8S	Screw 3 x 8	3	
174	15	PJKMA0013Z	PJKMA0013Z-1	Paper Exit Tray	1	
174	29	PJYE8PS8KM	PJGKA0019Y	Overlay Sheet	1	

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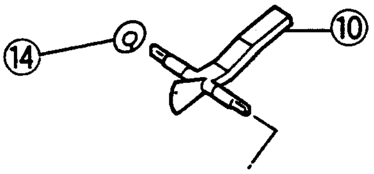
● 10.2.2 Paper Feeder (2)

Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
178	22	PJHRA0315Z	PJHRA0315Y	M.P.T. Holder Guide	1	
178	44	XUC4VW-W	XUC4VW-V	E-ring	4	

● 10.3 Power Supply Unit

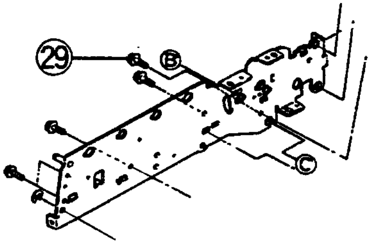
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
179	1	PJLP1S25Z	PJLP2S26Y	Power Supply	1	⚠ Non-Repairable
179	3	PJWCPS8KM	PJMCA0027Z	Shield Cover	1	
179	8	XBA1C100NU	(not installed)		0	
179	9	PJXB1063ND01	PJXB2063TJ01	Fuse (F203)	1	⚠

● 10.4.1 Toner Cartridge Selector/Paper-eject Unit (1)



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
180	10	PJHRA0227Z	PJHRA0227Y	Paper Tray Full Sensor Arm	1	
180	11	PJKM96X-1	PJKM96W-1	Unit Cover	1	
180	14	——	PJNWA0041Z	Plastic Washer	1	

● 10.4.3 Toner Cartridge Selector/Paper Eject Unit (3)

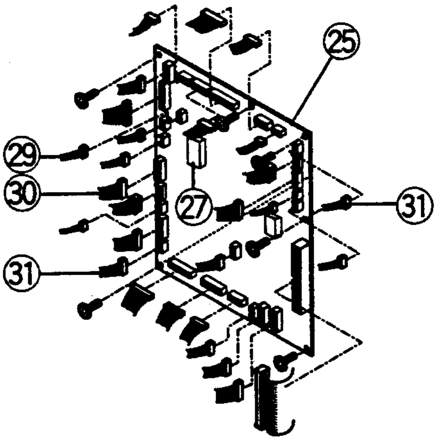


Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
184	13	PJHRA0299Z	PJHRA0229Z	Paper Exit Sensor Arm	1	
184	29	——	XTW3+10F	Screw 3 x 10	1	

● 10.5 Upper, Rear and Left Side Parts

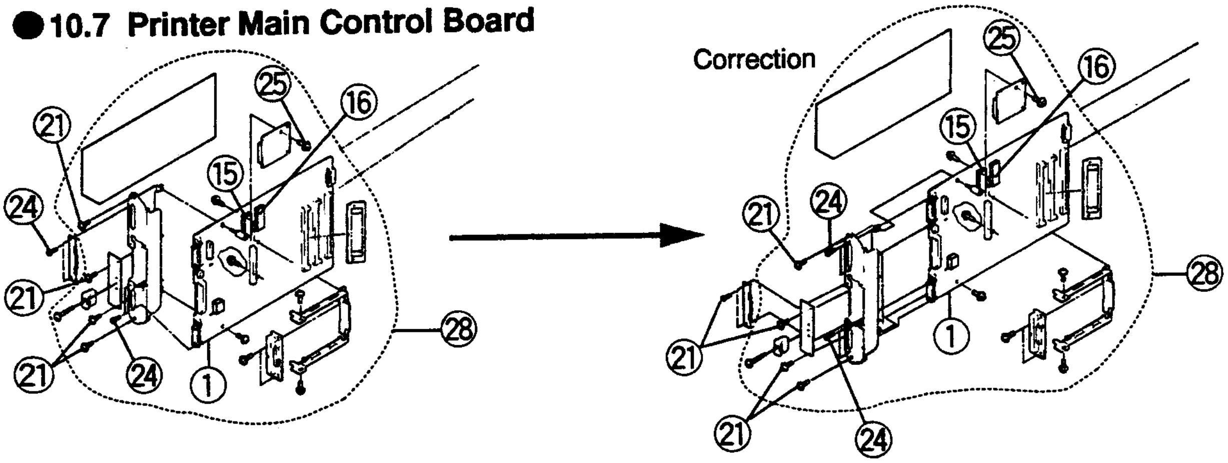
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
186	1	PJSG9021Z	PJWE5PS8KU	LSU (Laser Scanning Unit)	1	

●10.6 Engine Control Board Connector



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
187	25	PJWPKPS8KM	PJWPKPS8KU	Engine Control Board	1	RTL
187	27	PJWI3PS8KM	PJWI3PS8KU	ROM (IC4)	1	
187	29	—	PJJQD6023Z	Cable	1	
187	30	—	PJJRZCP021Z	Cable	1	
187	31	—	PJJQD8024Z	Cable	2	

●10.7 Printer Main Control Board



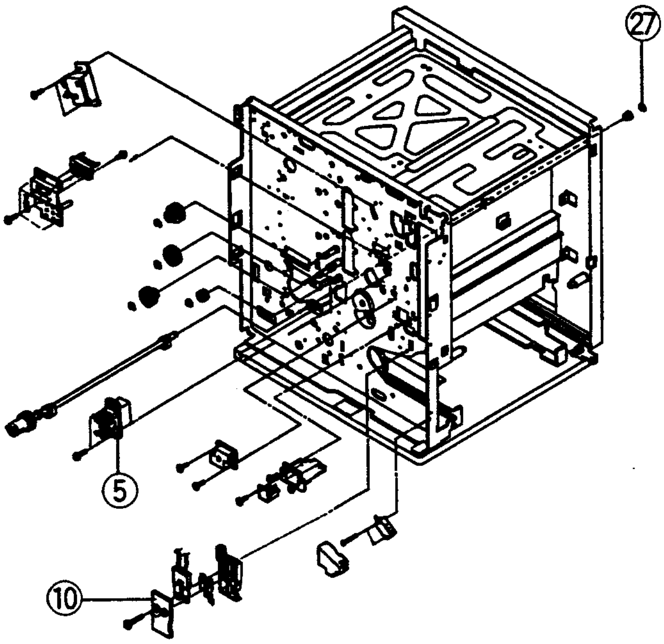
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
188	1	PJWPPS8KM	PJWPPS8KU	Printer Main Control Board	1	
188	15	PJWIPS8KM	PJWIPS8KM1	ROM (IC5)	1	
188	16	PJWI1PS8KM	PJWI1PS8KM1	ROM (IC6)	1	
188	21	XTW3+U6L	XTW3+U6L	Screw 3 x 6	5 → 6	
188	25	XYN3+F8	XYC3+FF8	Screw 3 x 8	1	
188	28	PJWPNPS8KM	PJWPNPS8KU	Main Control Board Assembly	1	RTL

●10.8 Toner Cartridge Drive Unit

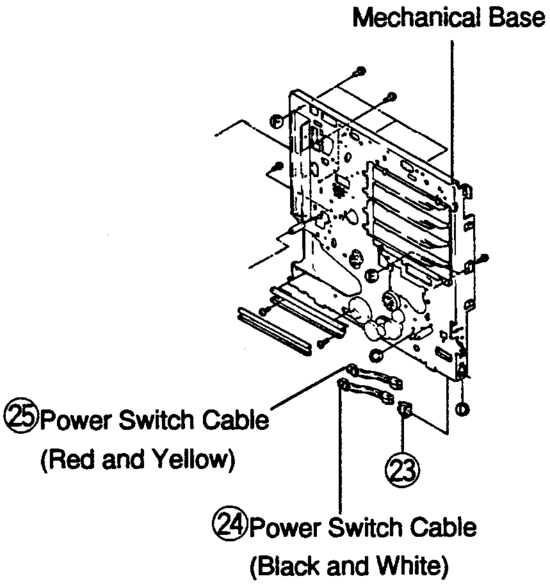
Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
190	3	PJHRA0311Z	PJZEBPS8KM	Drive Unit Case	1	
190	12	XTW3	XWT3	Washer	3	

●10.9.1 Mechanical Base (1)/10.9.2 Mechanical Base (2)

See the figure on the page 191.



See the figure on the page 192.



Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
191	5	PJJRZCP002Z	PJJRZCP002Y	Fuser Unit Coupling Connector	1	
191	10	PJHRA0222Z	PJZECPS8KM	Terminal Cover	1	
191	27	—	XUC6VW-V	E-ring	1	
193	23	PJSP1013Z	PJSP1022Z	Power Switch	1	⚠
193	25	—	PJJRZCP011Z	Power Switch Cable	1	

●10.9.3 Mechanical Base (3)/10.10 Paper Cassette/10.11 Fuser Unit/10.12 Packing Material

Page	Ref. No.	Parts No.		Parts Name & Description	Per Set	Remarks
		Original	New			
195	33	XYC3+F16	XYC3+LF16	Screw 3 x 1 6	4	
195	44	PJDS4280Y	PJDSA0122Z	Spring	1	
196	2	PJZU7PS6KM	PJZU7PS8KM	Paper Guide (R)	1	
196	4	PJYMPS8KM	PJYMPS8KU	Paper Cassette Base	1	
196	5	PJHR9797Y	PJHR9797Z-1	Paper End Plate	1	
197	1	PJAH06001Z	PJAH06002Z	Heat Lamp	1	⚠
198	1	PJPGA0099Z	PJZPPS8KA	Upper Carton [Australia]	1	
198		PJPGA0099Z	PJZPPS8KU	Upper Carton	1	
198	10	PJQQA0064Z	PJQQA0070X	Setup Manual [Australia]	1	
198		PJQQA0064Z	PJQQA0070Y	Setup Manual	1	
198	11	PJWR3PS8KM	PJWR3PS8KM1	Instruction CD-ROM	1	
198	14	PJWR2PS8KM	PJWR2PS8KM1	Driver Utility	1	
198	15	PJQHA0048Z	PJZEAPS8KM	Color Calibration Card	1	
198	17	PJJA127Z	PJJA124Y	AC Cord [Australia]	1	
198		PJJA127Z	PJJA115Y	AC Cord	1	
199	1	PJQMA0290Z	PJQMA0295Z	Manual	1	
199	4	PJPKA0101Z	PJPKA0137Z	Carton	1	
199	1	PJQMA0293Z	PJQMA0331Z	Manual	1	
199	4	PJPKA0149Z	PJPKA0107Z	Carton	1	

ORDER NO.KM69802635S0
G12

Service Manual

Supplement - 1, 3

Digital Color Imaging System
KX-PS8000
Printer Section

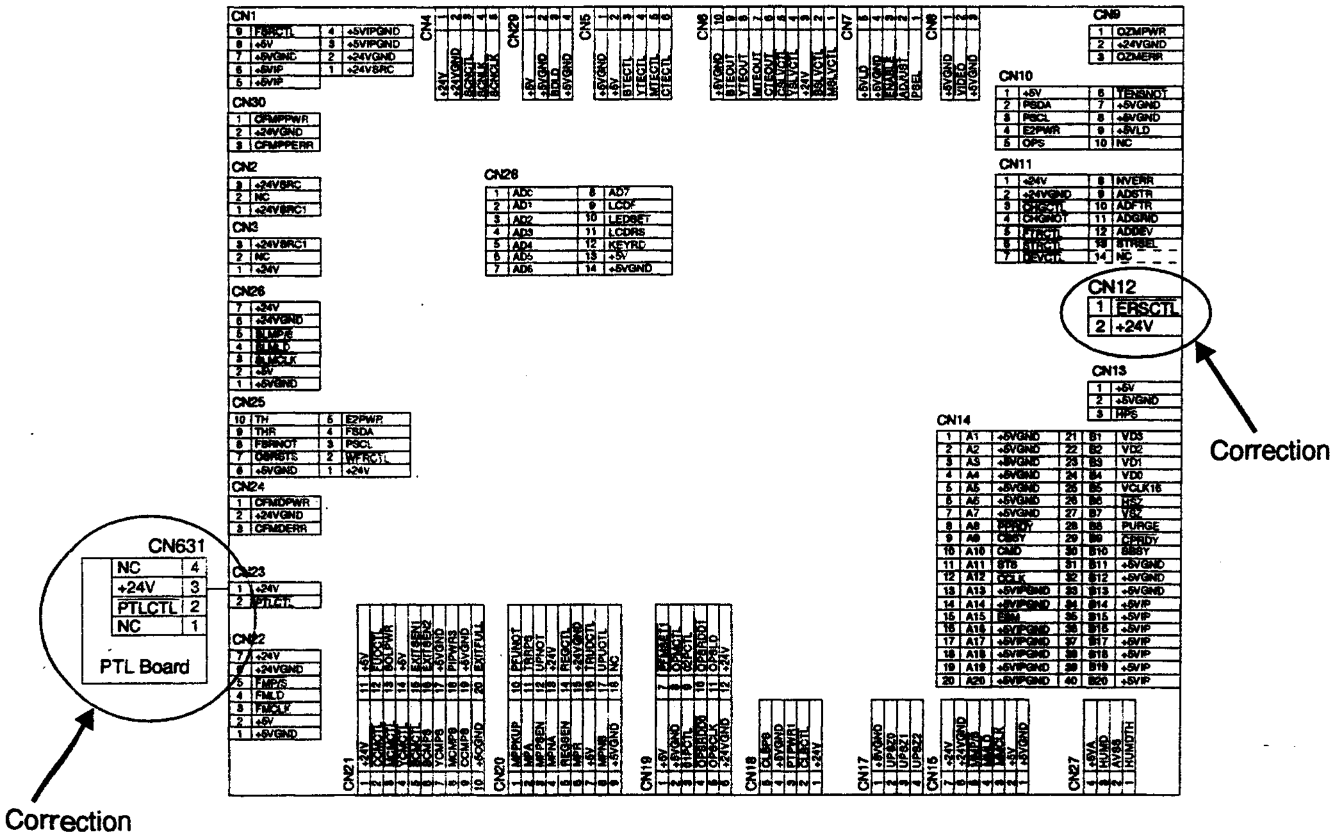
Please file and use this manual together with the KX-PS8000 service manual listed on the next page.

IMPORTANT

Subject: Service Manual Correction

The KX-PS8000 Service Manual has been corrected.
Please refer to the illustrations and parts listed.

6.4 Connection Diagram (Refer to page 102)


CN1
CN30
CN2
CN3
CN26
CN25
CN24
CN23
CN22
CN4
CN29
CN5
CN6
CN7
CN8
CN9
CN10
CN11
CN12
1 ERSCTL
2 +24V
CN13
CN14
CN28
CN21
CN20
CN19
CN18
CN17
CN15
CN27
CN631
NC 4
+24V 3
PTLCTL 2
NC 1
PTL Board
Correction
Correction

⚠WARNING

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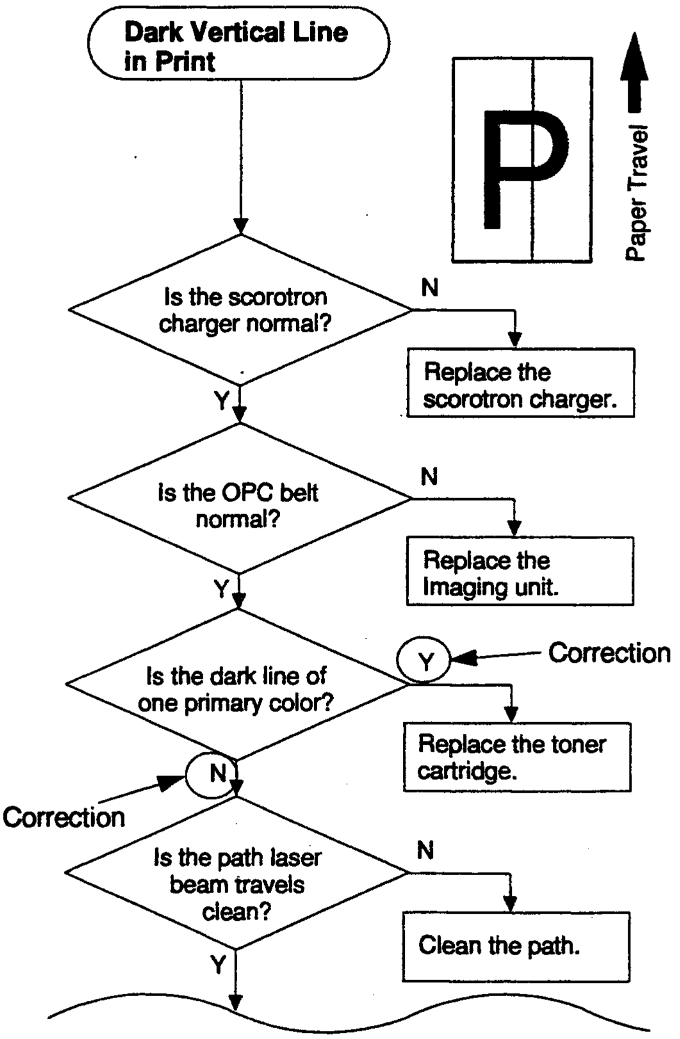
6.5 Explanation of Connectors

Engine Control Board (Refer to page 113)

CN12

Pin No.	Signal Name	Description	Direction
1	$\overline{\text{ERSCTL}}$	Erase LED Control	OUT
2	+24V	+24V	OUT

9.4.6 Dark Vertical Line in Print (Refer to page 138)


Dark Vertical Line in Print
P
Paper Travel
Is the scorotron charger normal?
N
Replace the scorotron charger.
Y
Is the OPC belt normal?
N
Replace the Imaging unit.
Y
Is the dark line of one primary color?
Y
Correction
Replace the toner cartridge.
N
Correction
Is the path laser beam travels clean?
N
Clean the path.
Y

Country	Order No.	Supplement No.	Country	Order No.	Supplement No.
Canada Panama	KM69709588C1	3	Sweden Norway Finland Denmark Australia	KM69801898A8	1
United Kingdom Germany South Africa	KM69711888A8	1			

ORDER NO.KM69805656S2

Service Manual

Supplement-2

Digital Color Imaging System

KX-PS8000

Printer Section

For Germany

Please file and use this manual together with the service manual for model
No. KX-PS8000, ORDER No.KM69711888A8.

IMPORTANT

Subject : Modification of the ROM and the Printer Main Control Board

1. Modification of the ROM

The Printer Main Control Board ROM's (IC5), (IC6) have been changed. The original ROM's should be used in early production units only. The new ROM's can be used in early or late production units. When replacing ROM's in early units, all ROM's must be replaced at the same time. This change has been performed on all units as of serial number "7L" production.

Serial Number → 7 L ■ ■ ■ ■ ■ ■ ■ ■ ■

December '97 production (A = January —— L = December)

Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
188	15	PJWIPS8KU	PJWIPS8KM1	ROM (IC5)	1	
188	16	PJWI1PS8KU	PJWI1PS8KM1	ROM (IC6)	1	

In the products which have the said new ROM and later, when replacing the EEPROM (IC9) or Printer Main Control Board with new parts, the EEPROM (IC9) must be set the country in the User Service Mode to change the country and language setting. Please refer to the section 3 in this supplement.

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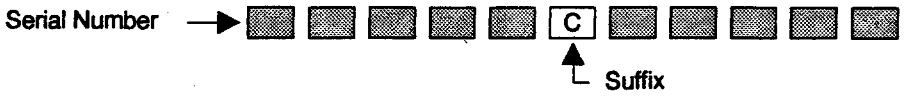
2. Modification of the Printer Main Control Board

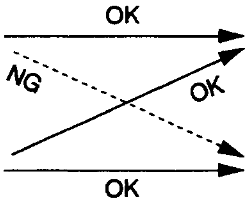
The Printer Main Control Board has been changed for production reasons. The original parts should be used in early production units only. The new parts can be used in early or late production units.
This change has been performed on all units as of serial number suffix "C".



■ Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
188	1	PJWPPS8KG	PJWPPS8KG1	Printer Main Control Board	1	RTL
188	28	PJWPNPS8KG	PJWPNPS8KG1	Printer Main Control Board Assembly	1	RTL

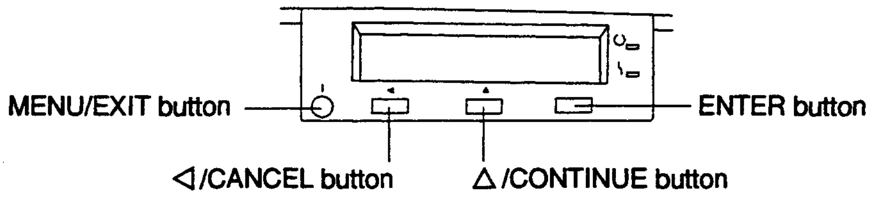
The compatibility between the ROM (IC5 and IC6) and the Printer Main Control Board is shown below.

IC5 ROM and IC6 ROM	Replacement	Printer Main Control Board and Printer Main Control Board Assembly
IC5 PJWIPS8KM (Original) IC6 PJWI1PS8KM (Original) IC5 PJWIPS8KM1 (New) IC6 PJWI1PS8KM1 (New)		PJWPPS8KM (Original) PJWPNPS8KM (Original) PJWPPS8KM1 (New) PJWPNPS8KM1 (New)

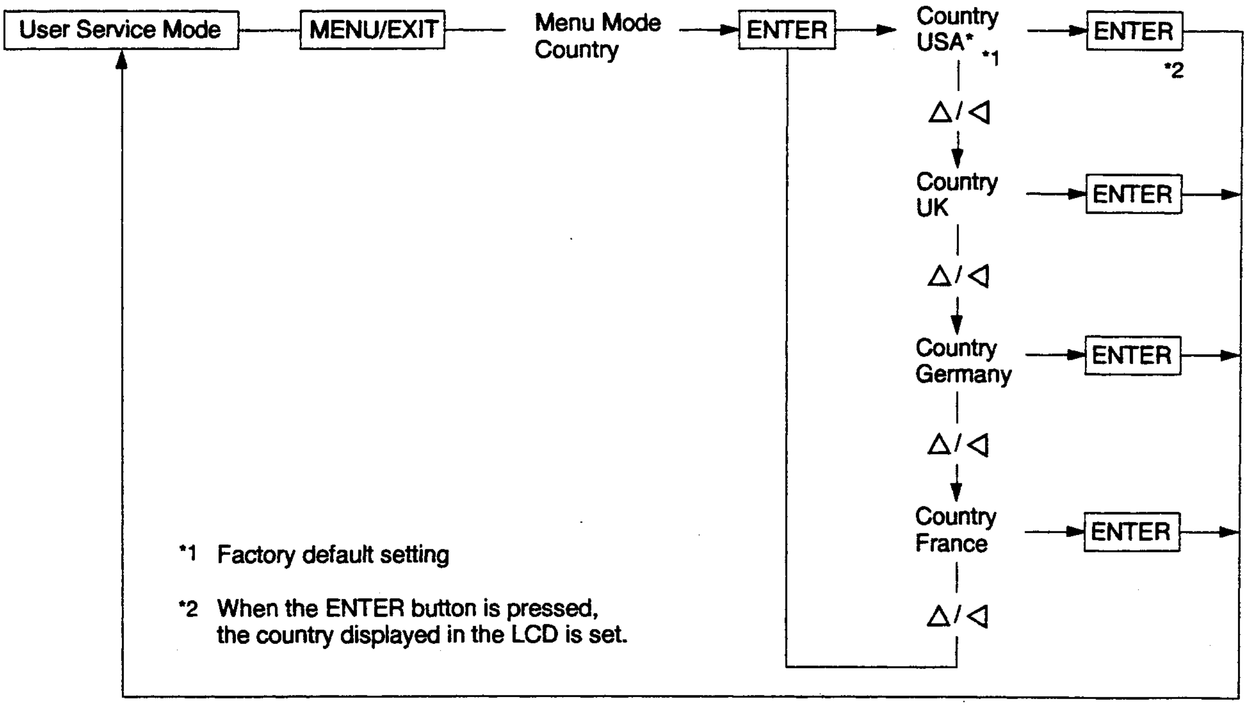
3. User Service Mode

The User Service Mode is entered by turning on the power switch while pressing the ◁ button and △ button at the same time. The LCD displays "Initializing", then "User Service Mode". This User Service Mode is canceled by turning off the printer.

LCD (Liquid Crystal Display) panel


MENU/EXIT button
ENTER button
◁/CANCEL button
△/CONTINUE button

MENU/EXIT : Press the MENU/EXIT button.
ENTER : Press the ENTER button.
△/◁ : Press the △or ◁button.


User Service Mode
MENU/EXIT
Menu Mode
Country
ENTER
Country
USA* *1
ENTER
*2
△/◁
Country
UK
ENTER
△/◁
Country
Germany
ENTER
△/◁
Country
France
ENTER
△/◁

*1 Factory default setting

*2 When the ENTER button is pressed, the country displayed in the LCD is set.

The difference of the menu and the configuration page by the change of the country setting is shown below.

Country Setting	Default Language	Language Menu (User Mode) Display	Language Display (Configuration Page)
U.S.A.	English (U.S.A.)	N/A (not changeable)	N/A (not displayed)
United Kingdom	English (U.S.A.)	N/A (not changeable)	N/A (not displayed)
Germany	German	Available *1	Available *2
France	English (U.S.A.)	N/A (not changeable)	N/A (not displayed)

*1 It is changeable between German and English.
*2 The language selected is displayed.

ORDER NO.KM69812694S8

Service Manual

Supplement-2,3

Digital Color Imaging System

KX-PS8000

Printer Section

Please file and use this manual together with the service manual for model
No. KX-PS8000, ORDER No.KM69801899A8.

IMPORTANT

Subject : Parts modification

Country	Supplement No.	Country	Supplement No.
Sweden Norway Finland Denmark Australia	3	Switzerland Belgium Portugal New Zealand	2

1. Service Manual correction

The following parts for KX-PS8000 Service Manual have been corrected.
This correction is effective from the first unit.

■ Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
172	1	PJYFPS8KM	PJYFPS8KM1	Top Cover	1	
180	9	PJKM95Y-1	PJKM95X-1	Face Down Cover	1	
198	20	———	PJQSA0157Z	Supplement	1	

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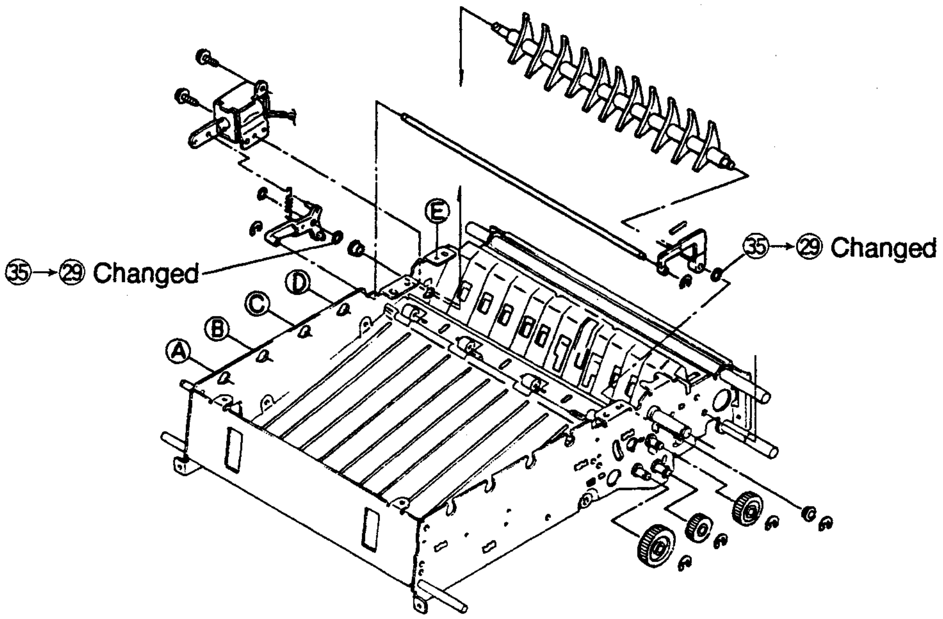
2. Modification to Plastic Washers

The 2 E-rings have been changed to 2 Plastic Washers to improve performance. The new parts should be used in early and late production units. This modification has been performed on all units as of serial number "8B" production.

Serial Number ⟶ 8 B ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨

└ February '98 production (A = January ——— L = December)

10.4.2 Toner Cartridge Selector/Paper Eject Unit (2) (Refer to page 181)



■ Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
182 182	29 35	PJNW525Z XUC5VW-V	PJNW525Z XUC5VW-V	Plastic Washer E-ring	1→3 17→15	

ORDER NO.KM69901703S8

Service Manual

Supplement - 3~5

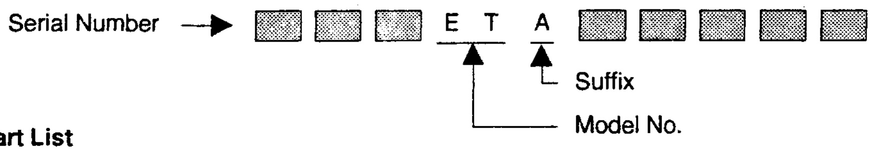
Digital Color Imaging System
KX-PS8000
Printer Section

Please file and use this manual together with the KX-PS8000 service manual listed below.

IMPORTANT

Subject : KX-PS8000 Enhanced parts

The parts for KX-PS8000 have been changed for the Enhanced version. This modification is effective on machines with model No. "ET" on the serial number and serial number suffix "A". When ordering these parts, the new part numbers must be used for machines with model number "ET" in the serial number. Machines with model number "EA" in the serial number must be used the original part numbers.



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
187	25	PJWPKPS8KU	PJWPRPS8KM	Engine Control Board	1	
187	27	PJWI3PS8KU	PJWI6PS8KM	ROM (IC4)	1	
188	1	PJWPPS8KM1	PJWPPPS8KM	Printer Main Control Board	1	
188	15	PJWIPS8KM1	PJWI4PS8KM	ROM (IC5)	1	
188	16	PJWI1PS8KM1	PJWI5PS8KM	ROM (IC6)	1	
188	28	PJWPNPS8KM1	PJWPQPS8KM	Printer Main Control Board Assembly	1	
198	10	PJQQA0070Y	PJQQA0070W	Setup Manual	1	
		PJQQA0070X	PJQQA0070W	Setup Manual [Australia] [New Zealand]	1	
198	11	PJWR3PS8KM1	———	Instruction CD-ROM	0	
198	14	PJWR2PS8KM1	———	Driver Utility	0	
198	20	PJQSA0157Z	———	Supplement	0	
198	21	———	PJWR4PS8KM	Driver Utility and Instruction CD-ROM	1	

Country	Order No.	Supplement No.	Supplement No.	Country	Supplement No.
United Kingdom South Africa Hong Kong	KM69711888A8	5	Finland Australia Switzerland Belgium Portugal New Zealand	KM69801898A8	4
		4			3
Sweden Norway Denmark	KM69801898A8	4			

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G12

Service Manual

Supplement - 4~7

Digital Color Imaging System

KX-PS8000

Printer Section

Please file and use this manual together with the KX-PS8000 service manual listed on the next page.

IMPORTANT

Subject : Parts modification

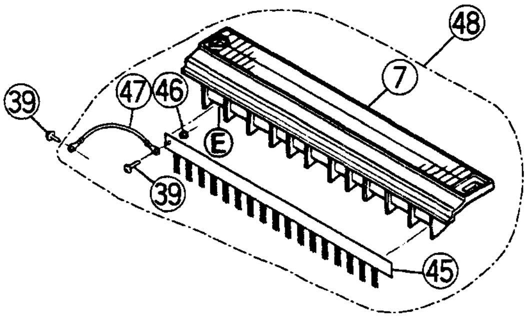
1. Modification of the Upper Paper Ejection Guide Assembly

The Upper Paper Ejection Guide has been changed and a Discharge Brash, Nut, Earth Cable and Screw have been added to reduce paper JAM D errors. The Upper Paper Ejection Guide Assembly is available as a complete unit. The new guide can be used in early or late production units. This change has been performed on all units as of serial number "8D" production.

Serial Number → 8 D ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨

└ April '98 production (A = January ——— L = December)

10.4.2 Toner Cartridge Selector/Paper Eject Unit (2) (Refer to page 181)



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
182	7	PJHR9861Y	PJHR9861X	Upper Paper Ejection Guide	1	
182	39	XTW3+6L	XTW3+6L	Screw 3 x 6	7→9	
182	45	———	PJMCA0055Z	Discharge Brash	1	-
182	46	———	XNG3B	Nut	1	
182	47	———	PJJTCC001X	Earth Cable	1	
182	48	———	PJZEP8410M	Upper Paper Ejection Guide Assembly	1	

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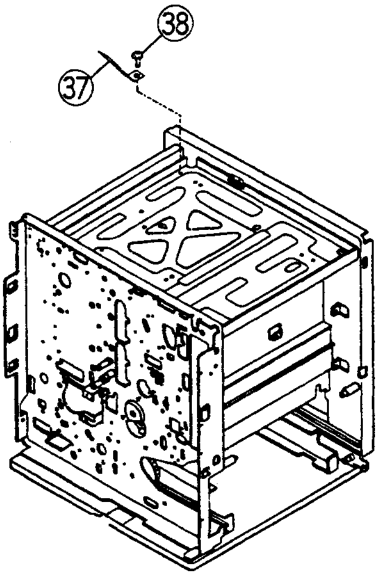
2. Addition of an Earth Plate

An Earth Plate and Screw have been added to improve Printer Error 13. The new parts can be used in early or late production units. This change has been performed on all units as of serial number "8E" production.

Serial Number → 8 E ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨

└ May '98 production (A = January ——— L = December)

10.5 Upper, Rear and Left Side Parts (Refer to page 185)



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
186	37	———	PJUS199Z	Earth Plate	1	
186	38	———	XTW3+U4L	Screw 3 x 4	1	

Country	Order No.	Supplement No.	Country	Order No.	Supplement No.
Canada Panama	KM69709588C1	7	Switzerland Belgium Portugal New Zealand	KM69801898A8	4
Sweden Norway Finland Denmark Australia	KM69801898A8	5	United Kingdom South Africa	KM69711888A8	6
			Hong Kong		5

ORDER NO.KM69809671S2

Service Manual

Supplement - 5

Digital Color Imaging System

KX-PS8000

Printer Section

For Germany

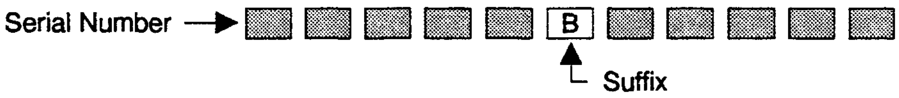
Please file and use this manual together with the service manual for model
No. KX-PS8000, ORDER No.KM69711888A8.

IMPORTANT

Subject : Modification of the parts

1. Modification of the Top Cover and the Face Down Cover

The Top Cover and the Face Down Cover have been changed to improve performance. When replacing one of the old parts, both new parts must be replaced at the same time. The new parts should be used in early or late production units. This modification has been performed on all units as of serial number suffix "B".



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
172	1	PJYFPS8KM	PJYFPS8KM1	Top Cover	1	
180	9	PJKM95Y-1	PJKM95X-1	Face Down Cover	1	

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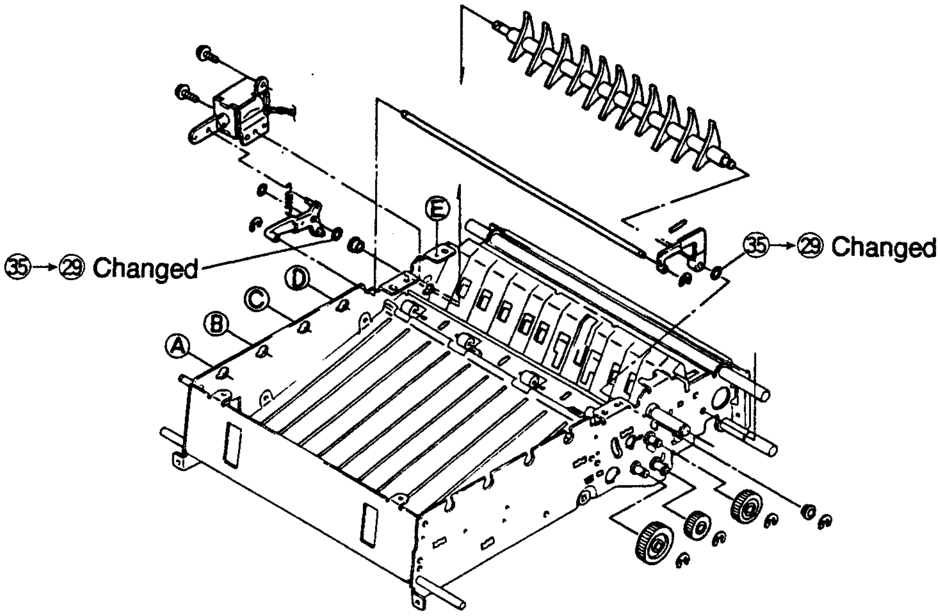
2. Modification of the Plastic Washer

The 2 E-rings have been changed to the 2 Plastic Washer to improve performance. The new parts should be used in early or late production units. This modification has been performed on all units as of serial number "8B" production.

Serial Number → 8 B ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨

February '98 production (A = January ——— L = December)

10.4.2 Toner Cartridge Selector/Paper Eject Unit (2) (Refer to page 181)



■ Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
182 182	29 35	PJNW525Z XUC5VW-V	PJNW525Z XUC5VW-V	Plastic Washer E-ring	1→3 17→15	

ORDER NO.KM69809672S2

Service Manual

Supplement-6

Digital Color Imaging System

KX-PS8000

Printer Section

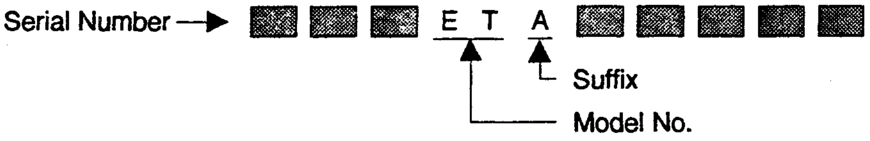
For Germany

Please file and use this manual together with the service manual for model No. KX-PS8000, ORDER No.KM69711888A8.

IMPORTANT

Subject : Modification of the parts

The parts for KX-PS8000 have been changed for version up. This modification is effective on machines with model No. "ET" on the serial number and serial number suffix "A". When ordering these parts, the new part numbers must be used for machines with model number "ET" on serial number. Machines with model number "EA" on serial number must be used the original part numbers.



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
187	25	PJWPKPS8KU	PJWPRPS8KM	Engine Control Board	1	
187	27	PJWI3PS8KU	PJWI6PS8KM	ROM (IC4)	1	
188	1	PJWPPS8KG1	PJWPPPS8KM	Printer Main Control Board	1	
188	15	PJWIPS8KM1	PJWI4PS8KM	ROM (IC5)	1	
188	16	PJWI1PS8KM1	PJWI5PS8KM	ROM (IC6)	1	
188	28	PJWPNPS8KG1	PJWPQPS8KM	Printer Main Control Board Assembly	1	
198	10	PJQQA0071Z	PJQQA0071Y	Quick Reference Guide	1	
198	11	PJWR3PS8KG	———	Instruction CD-ROM	0	
198	14	PJWR2PS8KG	———	Driver Utility	0	
198	20	———	PJWR4PS8KG	Driver Utility and Instruction CD-ROM	1	

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Service Manual

Supplement - 1

Digital Color Imaging System

KX-PS8000

Printer Section

For Germany

Please file and use this manual together with the service manual for model
No. KX-PS8000, ORDER No. KM69711888A8.

IMPORTANT

Subject : Parts modification

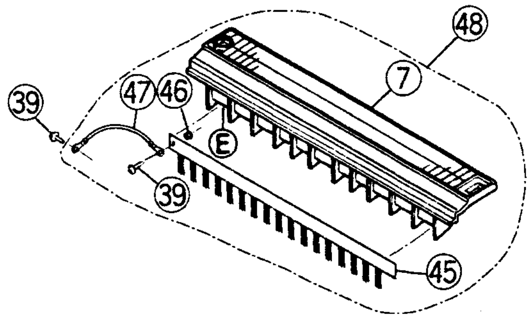
1. Modification of the Upper Paper Ejection Guide Assembly

The Upper Paper Ejection Guide has been changed and a Discharge Brash, Nut, Earth Cable and Screw have been added to reduce paper JAM D errors. The Upper Paper Ejection Guide Assembly is available as a complete unit. The new guide can be used in early or late production units. This change has been performed on all units as of serial number "8D" production.

Serial Number ⟶ 8 D ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨

└ April '98 production (A = January ——— L = December)

10.4.2 Toner Cartridge Selector/Paper Eject Unit (2) (Refer to page 181)



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
182	7	PJHR9861Y	PJHR9861X	Upper Paper Ejection Guide	1	
182	39	XTW3+6L	XTW3+6L	Screw 3 x 6	7→9	
182	45	———	PJMCA0055Z	Discharge Brash	1	
182	46	———	XNG3B	Nut	1	
182	47	———	PJJTCC001X	Earth Cable	1	
182	48	———	PJZEP8410M	Upper Paper Ejection Guide Assembly	1	

⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

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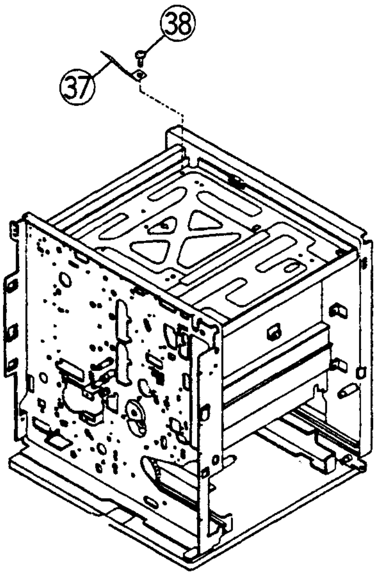
2. Addition of an Earth Plate

An Earth Plate and Screw have been added to improve Printer Error 13. The new parts can be used in early or late production units. This change has been performed on all units as of serial number "8E" production.

Serial Number → 8 E ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨

↑ May '98 production (A = January ——— L = December)

10.5 Upper, Rear and Left Side Parts (Refer to page 185)



Replacement Part List

Page	Ref. No.	Part Number		Part Name & Description	Per Set	Remarks
		Original	New			
186 186	37 38	——— ———	PJUS199Z XTW3+U4L	Earth Plate Screw 3 x 4	1 1	